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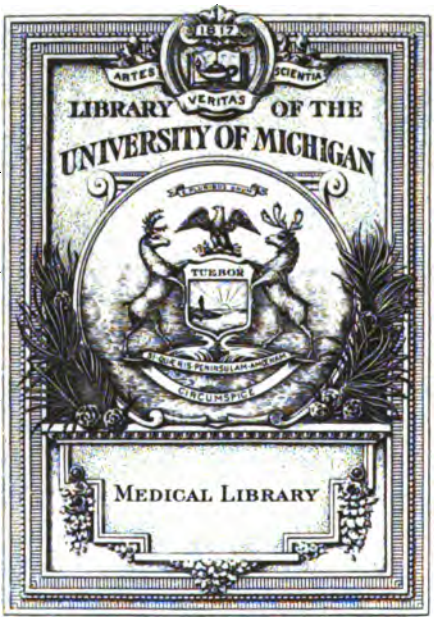

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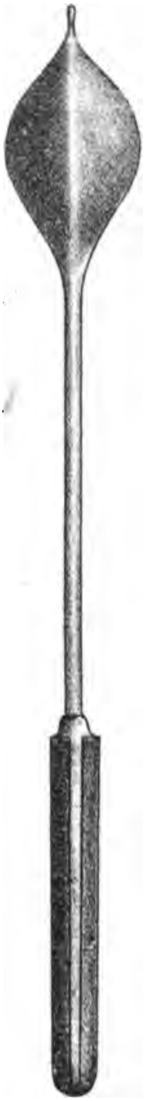

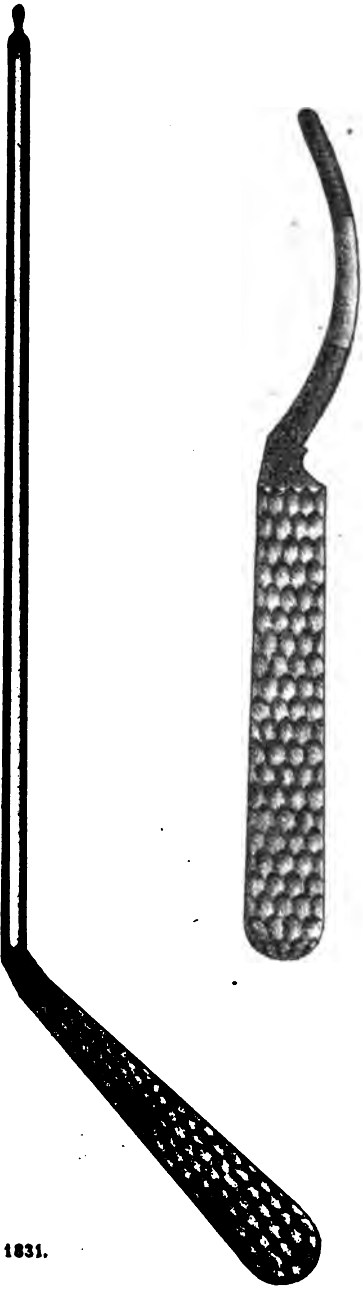

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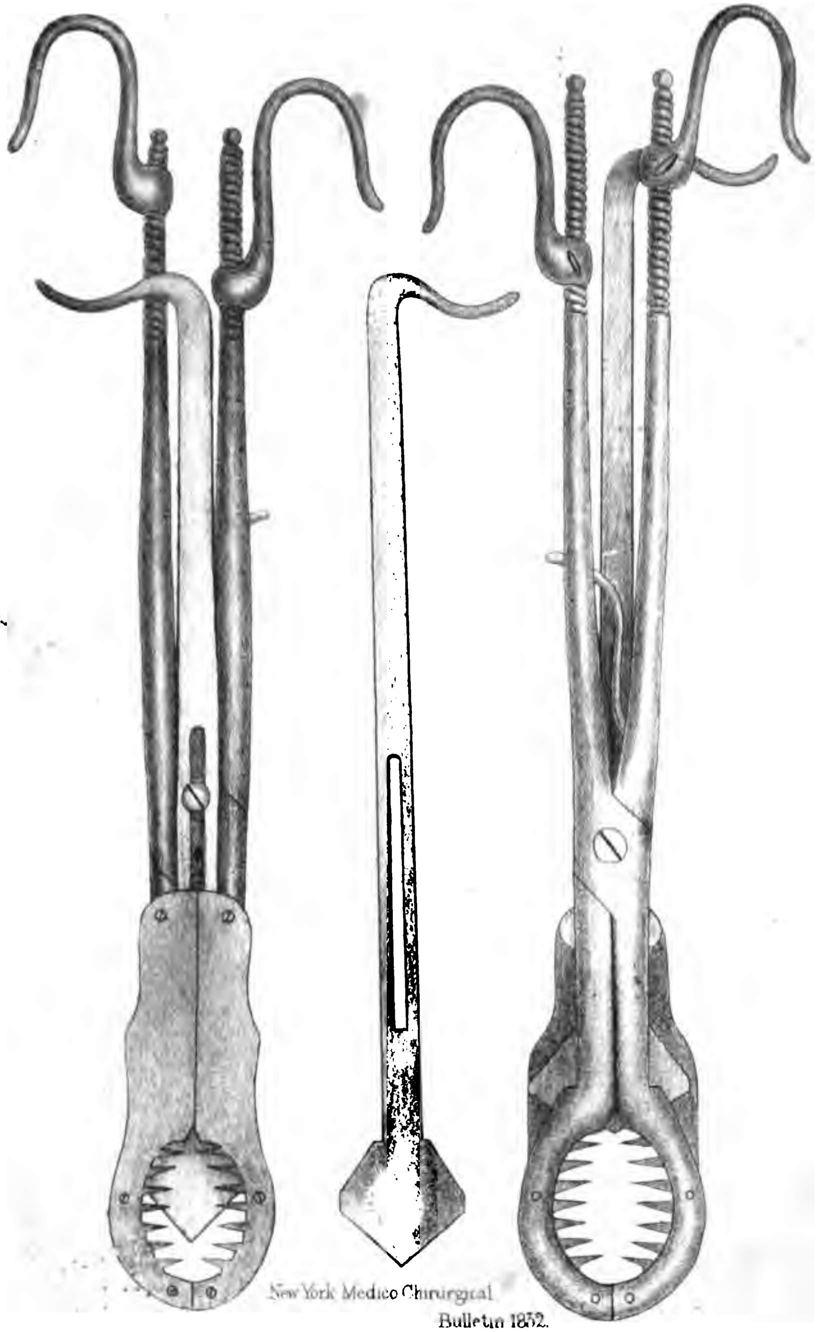

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N. Y. Lithography of Pendleton

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THE BILATERAL OPERATION FOR STONE.

In ancient times, lithotomy like other surgical operations, was performed by men devoid of mental culture, and unskilled in the healing art; for Hippocrates says, "Οὐ τεμέω δὲ οὐδέ μην λιθιῶντας' εχχωρήσω δὲ τοῖς εργάτησιν ἀνδρασι πρήξιος τῆσδε." Moreover in Egypt, where we first trace this operation, the different branches of the healing art, had particular professors, and those who operated for stone, confined themselves to it alone.*

Ammonius and Sostratus are the first lithotomists of whom we have any records. Clossius says that they performed the operation afterwards, (in the year 1524,) termed *apparatus minor* by Marianus Sanctus, in contradistinction to that of his master, *Johannes de Romanis*.† Both these men lived at Alexandria, and in all probability were cotemporaries. Meges, who afterwards dwelt at Rome, during the reign of Augustus, practised the same operation. He, however, altered the shape of the knife, and attached to it a crotchet, by which he was enabled to extract calculi, without breaking them; an expedient to which both Ammonius and Sostratus had often recourse.

Celsus first described this operation. After giving directions how the patient should be secured, and the stone fixed, he says, "*Cum jam eo venit, incidi super vesicæ cervicem, juxta anum cutis plaga lunata, usque ad cervicem vesicæ debet, cornibus ad coxas spectantibus paulum.*"‡ This passage, as clear and expressive as it may appear, has been variously interpreted, first because it has been misrepresented in many of the manuscripts and editions of the writings of Celsus, and secondly because all have not attached the same meaning to the words, "*ad coxas.*"

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* Herodotus informs us, that this division of medical labour, prevailed from time immemorial. Lib. ii. c. 84, p. 170.

† Analecta ad Historiam, Lithotom. 1792, p. 26.

‡ Lib. vi. c. 26. The edition from which the above quotation is taken, is by Leonard Targa, Leyden, 1785, 2 vols. 4to. Its accuracy is generally admitted.

Antyllus was the first author, as far as I know, who first translated Celsus erroneously; for he insisted on the necessity of confining the section to the left side of the perineum—a procedure which he somehow imagined was expressed by the Latin encyclopedist.

Paulus Ægineta says, "Then (when the stone is fixed) we cut between the anus and the testicles, not in the middle, but on the side towards the left buttock, "*ad alteram partem, ad sinistram natem.*" He was aware that Celsus used the terms "*plaga lunata,*" but he thought that more advantages would accrue, if the parts were divided obliquely: hence he not only recommended this deviation from the ordinary method of his day, but practised it himself, as he thinks, with decided advantage. Some surgical authors have very properly maintained, that he always operated on the side of the perineum; but they did not keep without the limits of error, when they asserted that he made a curvilinear incision. For when treating of the direction of the incision, he says, *obliquam sectionem faciemus.*[*]

Albacasis, after describing how the stone is to be fixed, directs the incision to be made on the left side, between the anus and the testicles. His words are, *Tum comprimas in illum cum digito tuo, tradasque extrorsum, ad illum locum quem velis incidere,—et incidas in interstitio quod est, inter anum et testiculos, non in medio, sed ad latus sinistræ clunis.*"[‡]

Brunus says "Cut on the stone, between the anus and the testicles, not in the middle, but on the side towards the left buttock, *in latere sinistræ clunis*, according to its length."[§]

Lanfranc thus writes, "Then when we detect the stone, because of its hardness, between the anus and the testicles, in the place named perineum, near the top of the thigh; we cut on it between the line which extends from the anus to the testicles and the summit of the thigh."[||]

Theodricus says, "Make an oblique incision near the left buttock on the stone which is made to protrude by the finger in ano."[**]

Rolandus thus expresses himself, "Cut two fingers breadth before the verge of the anus to the neck of the bladder: take care, however, that the incision does not divide the line which extends from the anus to the testicles, but cut on its side."[††]

Guillaume de Salicet, who lived in the beginning of the thirteenth century, gives the following direction for making the incision, "Then in the place where we perceive the stone, we cut obliquely towards the thigh."[*]

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[*] Rahz Contin, lib. x. c. 2. p. 215.

[†] De re Med. lib. ii. cap. lx. p. 575.

[‡] Lib. ii. sect. lx. p. 285.

[§] Bruni Chirurgica Magna, lib. ii. chap. xvii. p. 129.

[||] Chirurg. Doct. Tract. iii. cap. viii. p. 245.

[**] Lib. iii. cxliv. p. 173.

[††] Lib. iii. chap. xxxiii. p. 198.

Guy de Cauliaco, in the beginning of the fourteenth century, desires the stone to be brought into the neck of the bladder, between the anus and the testicles, and then cut on, at a distance from the rapha, following the direction of the rugæ of the left side, "*Ducatur pro posse lapis ad collum vesicæ inter anum et testiculos: et tunc secundum incessum rugorum loco remoto aliquantulum a parte sinistra, a commissura, usque ad lapidem.*"[†]

Ilsemann says "The parts to be cut are the skin and fat between the left erector muscle and the bulb of the urethra, and the inferior and posterior part of the bladder even to its neck.[‡]

So far did error work its way, that even Sharp himself, who was a pupil of that great lithotomist, Cheseldon, thus describes the *lesser apparatus*, "You first introduce the fore finger and middle finger of the left hand dipt in oil, up the anus, and pressing softly with your right hand above the os pubis, endeavour to bring the stone towards the neck of the bladder, then making an incision on the left side of the perineum, above the anus, directly upon the stone, you turn it out through the wound, either with your finger or a scoop."[§]

Heister, who was conversant with the writings of Ægineta, performed, described, delineated, and recommended his operation. He says, "First the surgeon dips his fore finger of his left hand in oil, and then introduces it into the anus of the patient, rightly disposed and prepared, pressing it forwards towards the os pubis; while with his right hand he presses back the bladder immediately above the pubis. Having felt the stone he thrusts it to the left side of the perineum near the anus, and then holds it in his fingers in such a manner, that it forms a visible tumor *in perineo.* This done, he makes an incision on the most prominent part of the tumor *in perineo*, with a scalpel or a bistoury held in the right hand, cutting down successively through the integuments on the calculus and enlarging the wound longitudinally, he at last divides the bladder itself in the same direction, sufficient for the extraction of the stone."[‖]

Boyer says: "Then (when the stone is fixed) he (the operator) takes a bistoury in his right hand, and makes on this prominence, which is on the left side of the rapha, a deep incision, slightly oblique from above downwards, and from within outwards, and which ought to penetrate even to the stone."*

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[*] Chirurg. lib. i. cap. xlvii. p. 318. It is not our intention here to inquire, whether Salicet brought the stone into the neck of the bladder, nor shall we make any commentary on the part of the viscus which he was in the habit of dividing.

[†] Chirurgica Magna, Tract, vi, doct. ii. p. 80.

[‡] Collection des Theses de Chirurgie de Haller, tom. iv. Dissert. cii. p. 157. Le Dict. de Plaque, tom. x. p. 659. This Ilseman has been accused of describing the operation of Salicet: but he is just as guilty of it, and not one jot more, than Salicet was of the gross charges laid to his account by invidious and petty minded rivals.

[§] A Treatise on the Operations of Surgery, by Samuel Sharp, ch. xviii. p. 86.

[‖] General System of Surgery, Vol. ii. p. 160, tab. xxix. figs. 569.

In the middle of the seventeenth century (1664) Raoux de Cauvesson cut on the gripe by a curvilinear incision on the left side of the perineum; the horns of the incision looking towards the corresponding hip. Before he applied the knife, he forcibly drew off the integuments to the right side, so that the external and internal parts of the wound might not correspond; for he thought that this kind of vavuler incision, would induce the urine to take its natural course with more facility.†

Foubert says: "When the stone is brought into the neck of the bladder, a semilunar incision, with its extremities turned towards the thigh, is to be made near the anus, penetrating even to the neck of the bladder."‡

B. Bell when treating of the Celsian operation, thus writes: "It is to be pressed (calculus) forwards below the pubes, and secured on one side of the perineum, between the bones and the anus.‖ This being done, we are recommended by Celsus to make a semilunar incision through the skin, cellular membrane, and muscles, beginning on one side of the anus and carrying the cut directly over the centre of the tumor formed by the projection of the stone."§ Again, he says, "a transverse or semilunar cut, through the integuments and muscles, I believe to be better adapted than any other for giving a free passage to the stone; but as the bladder is composed of very dilatable membranous substance, there is no necessity for a transverse cut being made into it."**

These quotations at first sight appear to be at variance with each other; for in the first it is stated that the calculus is to be secured on one side of the perineum, and that a semilunar incision is to be made over the centre of the tumor formed by the stone: in the second, he speaks of a transverse cut, but uses the term synonymously with semilunar, and by it wishes but to simply state, that the wound does not correspond to the long diameter of the perineum. Some, I am aware, have interpreted our author otherwise: and quoted him as having described the operation of Celsus as extending across the perineum.

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* Traite des Malades Chirurgicales. Tome Quatrieme p. 655, Bruxelles 1828.

† Remarques sur la Chirurgie de Chauliac, par M. Simon, de Mingelouzeaux, tom ii. Section sur la Nouvelle maniere, de tailler la pierre, Bordeaux, 1663.—Roonhuyze, Heelkonstige Annmerk, der Vrow gebreeken, p. 11. in 8vo. Amsterdam, 1762.

‡ Nouvelle Méthode de Tirer la Pierre de la Vessie, Par M. Foubert, Memoirs de l'Académie Royale de Chirurgie, Tome Troisiome p. 263, à Paris, MDCCLXXXI.

‖ This corresponds to the practice of Ægineta, Sharp, Heister, and Raoux.

§ System of Surgery, vol. vi. ed. 7, p. 119, Edin. MDCCCI.

** Op. cit. p. 123.

Delechamps, whose scholarship was not exceeded by any of his cotemporaries, has described the meaning of Celsus in the following manner; "*qu'il faut faire l'incision, en forme de croissant duquel les cornes sont tournées vers la Cuisse.*"[*]

Deschamps says: "When the stone is brought downward, we ought to make a crescentic incision through the integuments near the anus all along to the neck of the bladder, taking care that the extremities of the wound are turned a little towards the thigh."[†]

Sprengel says: "When we believe that the calculus is lodged in the neck of the bladder, we make, according to the directions of Celsus, a semilunar incision before the anus, the extremities of which are directed towards the groins; then in the interior of this incision we practise a second transverse one, which penetrates to the bladder." Again he says: "Celsus directs the first incision to be made before the anus, *juxta anum*. Strictly speaking, it ought to be executed in the space comprised between the left ischio-cavernous muscle and the *bulb of the urethra*, which is surrounded by the bulbo-cavernous muscle, a space occupied by fat, a few fibres of the levator ani, and the transverse perineal muscle. These fibres are necessarily cut, as well as the left vesicula seminalis, vas deferens, and sometimes even the left ureter. But Celsus recommended to cut on the left side of the rapha, because the anus, in consequence of the introduction of the finger, is drawn a little to the right."[‡]

These statements are at variance. The first is like that of Krause and others, to be related hereafter; while the second corresponds with those I have just cited. How shall we account for this inconsistency in the accurate and learned Kurt Sprengel?

Jourdan and Besin thus express themselves on this subject: "The incision ought to be performed in the space between the ischio-cavernous muscle of the left side and the bulb, or rather the bulbo-cavernous muscle which covers it. This space is filled with fat, which, together with the transverse perineal muscle, and some fibres of the levator ani, are necessarily cut. The incision ought to be made on the left side of the rapha, because the anus in which we introduce the finger to depress the stone, is slightly inclined towards the right." Again they say: "*C'est, vers l'aine que Celse voulait que les hornes de l'incision fussent tournes.*"[§]

Cooper says: "The operator then took a scalpel and made a lunated incision through the skin and cellular substance, directly on the stone, near the anus, down to the neck of the bladder, with the horns towards the hip."*

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[*] Chirurgie Francaise, p. 251.

[†] Traite de Taille, tom. ii. p. 12. Par Begin, Paris, 1826.

[‡] Histoire de la Médicine, vol. vii. p. 212, 213. Traduit Par. A. T. L. Jourdan, Paris, MDCCCXV.

[§] Dictionnaire des Sciences Medicales, tom. 28, p. 47.

Portal thus interprets Celsus: "The stone being lowered into the neck of the bladder, we make a semilunar incision through the skin near the anus, which ought to penetrate to the neck of the bladder; with the horns slightly turned towards the thighs."†

Krause strives with much ability to prove, that "Celsus directed the incision to be semilunar, to cross the perineum, its convexity being directed towards the verge of the anus, and its horns upwards and outwards."‡

Ninin in his translation of Celsus says, that "a crescentic incision should be made over the verge of the anus, with its extremities turned towards the thighs."

Fouquier and Ratier thus translate Celsus: "We ought to make a crescentic incision through the skin near the anus, penetrating even to the neck of the bladder, with its extremities turned slightly towards the thighs."‖ Though it may not appear so at first sight, still it is certain that the incision described by Portal, Ninin, Fouquier, and Ratier, has exactly the same form and direction as that mentioned by Krause; for when the patient is fixed as directed by Celsus, his knees are drawn towards the chin, consequently if the horns of the incision are turned towards the thighs, they must be directed upwards.

Bromfeild was the first author who powerfully combatted those, who had and did advocate, that the Celsian operation was performed on one side of the perineum. Indeed, we may say, that he crushed his opponents, and annihilated the rubbish that the ancients had accumulated on this subject. To use the words of Morland, "*Mais comme l'avait deja remarque Will. Bromfeild dans le tom 2 Chirurgical Observations and Cases, ces divers interpretations on traductions ne sont conformes, ni au texte de l'auteur qui est tres clair, tres precis, ni a ses intention, il a l'object essentiel qu'il se proposait.*" After commenting severely on the description given by Heister of the Celsian operation, he says: "It is possible that after reading this passage in Celsus, though every surgeon will allow that a lunated wound is intended, yet some may object to the *cornua* pointing downwards; and may say, if we translate *coxas*, the hip bones, as we understand the hip in English, the *cornua* of the lunated wound would point upwards, as represented by figure ii: but Celsus by *coxas* certainly meant the whole of the *innominata*. I should rather suppose that the *cornua* of the lunated wound, should point towards the *tubercula of the ischia*, for the knife by passing above and on each side of the anus, would thereby avoid wounding the *intestinum rectum*, and a very considerable wound would be made with the greatest advantage in respect to situation, for the extraction of a very large stone: he then orders a second incision to be made transversely, by which the neck of the bladder is opened."*

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* Surgical Dictionary.

† Precis de Chirurgie Pratique, seconde partie, p. 697, Paris, MDCCLXVIII.

‡ Platners Einleitung in die Wundarzneykunde, vol. ii. p. 1030, Leipsig, 1786.

‖ A. C. Celse, Traduction Nouvelle par Fouquier and Ratier, p. 453, Paris, MDCCCXXIV.

J. Bell is the next, and, I believe, the only British author who has taken a part in this dispute. He says: "One expression, the *plaga transversa*, has generally perplexed translators, though the sense is very plain. The incision made by Celsus crossed the perineum, and was in all respects transverse with regard to the bladder, as well as the external parts, a lunated incision is to be made down to the neck of the bladder, with the horns looking towards the hips; and then in the deepest and narrowest part of the wound, is to be made a second transverse incision into the neck of the bladder itself."—"The incision of Celsus was then lunated, and could not be at once lunated and longitudinal. Secondly, the horns of the lunated incision pointed to two corresponding parts, call them the two hips, or the two thighs, which you please. Now had not the incision been in every sense of the word transverse, its horns could not have pointed to the two corresponding parts, but to the pubis and the anus. Thirdly, the deep incision is described in the words *Altera transversa plaga*, a second transverse wound, and these words at the same time are as definite and relative a description of the first as the second wound."†

In the beginning of the present century, Chaussier and Ribes made repeated experiments on the dead, to settle the protracted discussion. They found that when the incision was cautiously made over the verge of the anus, there was no difficulty in arriving at the prostrate, which they found could be easily cut on both sides; thus leaving a direct and large opening in the neck of the bladder."‡

Beclard made similar experiments, and arrived at the same conclusions. Moreover, in commenting on the text of Celsus he says: "The last (a crescentic incision over the verge of the anus, the horns of which are directed downwards and outwards,) appears to me more reasonable; then another transverse incision is to be made according to the text which I have cited, *qua strictior ima plaga est;* a fact which clearly indicates that this incision ought to be made in the deepest part of the first incision instead of the inferior part, as it is commonly translated. In the text of Valert, the place of the second incision is indicated *qua resina plaga est,* in the curved part of the wound; which is favourable to my opinion."‖

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* Chirurgical Observations, vol. ii. from 361 to 373, & 218 & 219. pl. 12. figs. i. ii.

† The Operations of Surgery, by J. Bell. vol. ii. p. 46, 47. Edin. 1806.

‡ Propositions sur Divers Objects de Médicine, Par Pierre Morland, p. 27, Paris 1805.

‖ Propositions sur quelque Points de Médicine, Par P. A. Beclard, p. 38, 39. Paris, 1813.

It will be perceived from what I have written, that the commentators on the Celsian operation, may be divided into four classes.

1st. Those who advocated the oblique lateral operation.

2d. Those who advocated the curved lateral operation.

3d. Those who advocated the transverse operation, with the horns of the incision turned upwards.

4th. Those who advocated the transverse operation, with the horns turned downwards and outwards.

The first class includes Ægineta, Theodoricus, Guillaume de Salicet, Guy de Cauliaco, Sharp, Heister, and Boyer. The second, Raoux, Foubert, B. Bell, Delachamps, Deschamps, Sprengel, Jourdan, Begin, and Cooper. The third, Portal, Krause, Ninin, Fouquier, and Ratier. And the fourth, Bromfeild, T. Bell, Chaussier, Ribes, Morland, and Beclard.*

It is doubtful what direction Antyllus, Albucasis, Brunus, Lanfranc, Rolandus, and Ilsemann gave the incision. I am rather inclined to believe that Antyllus was favourable to the semilunar, and the other five to the oblique section. This opinion, however, I have only formed from the custom of the ages in which they lived.

All difficulty on this long-agitated question never would have been created, or would soon have ceased, had surgeons understood a little more of Latin, and scholars been more skilled in anatomy; but this happy and necessary combination, either did not exist, or was improperly applied. The fact is, that the word *coxa vel coxendix*, as some authors write it, was applied to, and is even still used, to signify the *pelvis, innominata*, but more particularly the *ischium*. This, any one may satisfy himself of, by referring to Celsus and Blancard. Therefore, all doubt must cease; Celsus made, or at least described, a semilunar section in front of the anus, with its extremities turned towards the *ischia*, "*cornibus ad coxas spectantibus paulum.*"

SECOND PART.

Professor Chaussier, from the experiments which he had made to determine the passage of Celsus, alluded to in the first part of this essay, was led to project a new operation for stone, which may be summed up as follows.

The subject being secured on an ordinary table, with the head on a plane lower than the pelvis, so as to expose the perineal region in its greatest extent, and to render the pubes nearly horizontal. A staff with two grooves united on its most convex part, is next to be introduced. This instrument is then confided to an assistant, who is also to elevate the scrotum, and make tense the skin of the perineum. Then, the operator, having depressed the anus with the three fore fingers of the left hand, commences an incision on the right side of the perineum, about two or three centimeters from the meridian line, and extends it from right to left, cutting the perineum transversely about a centimeter and a half before the border of the anus. Having arrived on the left side of the rapha, he prolongs the incision obliquely downwards and outwards towards the tuber ischii. Then he prolongs the incision to the same extent on the right side. In this section, the skin, a part of the coccigeo-anal and ischio-perineal muscles are divided.

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* In taking quotations from, and referring to these authors, I have thought proper to arrange them according to the operations they advocated. With respect to the doubtful authors, I have placed them in the situation which I thought they merited, with the exception of Antyllus, whom I was compelled to place before Ægineta, from the circumstance of his being the first, as far as I know, who interpreted Celsus incorrectly.

The index finger of the left hand, is now to be thrust into the middle of the wound, and the rectum depressed as far as possible; then, by a cautious dissection, the knife being guided by the fore finger of the left hand, the membranous portion of the urethra is to be exposed. The assistant is then to incline the handle of the staff steadily to the right groin, while the surgeon strikes its groove, and prolongs the incision to the left through the thickness of the prostate. This being effected, the assistant inclines the handle of the staff in the same manner towards the left groin, and the surgeon makes a section in the right, similar to that already executed in the left side of the prostate.

Chaussier has sometimes used the double bistoury, (improved by Fleurent,) instead of the scalpel, for the division of the prostrate.*

The operation described by Beclard, in 1813, was, in substance, the same as that of Chaussier. He says, "a staff being introduced into the urethra, I make a curved incision before the verge of the anus, with the extremities directed towards the ischia; in the middle part of the incision I search for, and cut through the membranous portion of the urethra on the groove of the staff; then, by this aperture, I introduce an instrument fitted to make an incision of the neck of the bladder nearly transverse."†

It appears surprising how the French surgeons should allow such researches as those just now detailed, to remain neglected, and still more, why Beclard, who had constant opportunities of testing his new operation on the living body, should allow it to pass untried. It would appear that he changed his views, for we find twelve years elapse before he makes the trial, and then only in a modified manner, and after Dupeytren, who, in the year 1824, performed it five times successfully.‡ These cases were related by the operator to the section of surgery, on the 15th of July, 1824. It appears he had no knowledge of the works of Morland and Beclard; but from reflecting on the operation described by Celsus, he was led to believe that it was based on better principles than the many operations which have been substituted for it. He conceived, that by the aid of a staff and a double bistoury, the division of the prostate could be easily and regularly made.

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* Morland, Op. Cit. p. 27, 28, 29.

† Op. Cit. p. 39,

‡ Archiv, Gen. de Med. Mai, 1724, p. 159.

The staff which he uses is made more full at its curvature than elsewhere, by which contrivance he thinks it can be more easily reached. It also differs from the common staff, in being terminated by an olivary button, so as to prevent its entanglement in the mucous membrane. The double bistoury is like that used by Franco, to dilate the wound in his favourite operation; an instrument subsequently much improved by Fleurent, of Lyons. Dupuytren's bistoury however differs from that of Fleurent's, in the following respects: 1st, It is curved at its distal half. 2d, The blades are terminated by buttons. 3d, When separated from each other, they form the segment of a circle, and 4th, By the mechanism of the handle, the blades can be separated, so as to ensure any extent of incision within eighteen lines. The handle, of a conical form, is traversed by a screw, which is continuous with the sheath that conceals the blades; when turned from left to right, it insinuates itself between the *basicules*, which are continuous with the blades, and by its conical form, increases the distance between them, when they are compressed, thus necessarily diminishing the separation of the blades. On the same principle, by screwing the handle in an inverse direction, the extent in separation is proportionably increased. Some of these instruments have the anterior of the screw perfectly flat, and marked with numbers, which assist the surgeon in giving the handle a proper position, before he commences the operation.

The patient being secured in the ordinary manner, the staff is introduced and trusted to an assistant, who draws it vertically into the arch of the pubis. He then commences an incision midway between the right tuber ischii and anus, and prolongs it in a curved direction five or six lines above the anus, to a corresponding point on the opposite side. He then divides the deeper parts by a second section made in the same direction as the first. The left index finger is then carried into the wound and used as a conductor for the bistoury, in its passage through the membranous portion of the urethra, which being opened in a longitudinal direction to the extent of a quarter of an inch or more, he places the nail of his index finger in the groove of the staff, so as to serve the purpose of a conductor to the lithatome. He takes this instrument, and introduces it with its convexity towards the rectum, then when it is brought in contact with the staff, a few sliding motions are performed to give assurance that they are properly adjusted. He now seizes the staff in his left hand, and while he lowers it gradually towards the perineum, he glides the lithotome along its groove into the bladder. This being affected, he withdraws the staff, and turns the concavity of the lithotome towards the rectum; then he presses the *basicules* towards the handle, starts the blades, and withdraws the instrument, steadily and gradually depressing its handle, as it cuts its way out.*

L'heureuse issue de ces premières tentatives rappella aussitôt à Béclard un procédé qu'il avait négligé jusqu' alors.† He now performed his long neglected operation successfully in many cases, and reported the same on different occasions to the section of surgery;‡ but as I before stated, he modified the operation so well, described by him in 1813, as will be readily observed by the perusal of the ensuing description. The patient being properly secured, and the staff introduced, he proceeded as in the lateral operation, with this exception—that during the division of the superficial parts, he allowed the staff to remain unsupported, as he was impressed with the idea, that the pressure made by an assistant, through the medium of the staff, tended to displace the parts to be divided. Having reached behind the bulb, and opened into the membranous portion of the urethra with a knife very similar to that delineated by Le Dran, he then grasped the staff and bore off its handle to the right groin, gradually turning its groove forwards and outwards towards the left ischium, with the edge of the knife now looking almost horizontally to the left side, he pushed it on through the prostate with a sawing motion, thus dividing the prostate as he entered. By elevating his wrist he gave the blade a direction parallel to the axis of the prostate, and in this manner avoided wounding the ejaculatory ducts and the *bas-fond* of the bladder. The section being completed, he withdrew the knife in the same direction as he entered it. When the opening thus obtained was not ample enough for the extraction of the stone, he enlarged the incision with a probe pointed bistoury, and if this did not afford space enough, he again introduced the bistoury conducted by his left fore finger, and made a transverse section of the opposite side of the neck of the bladder, cutting from within outwards.‖

The operation just described, is nearly similar to that termed by M. Senn, of Geneva, *Taille Bilaterale Modfée;* yet as there are some points in which they differ, it is but right to mention them: 1st, The incision of the left side of the prostate is nearly transverse in Beclard's operation. In Senn's operation it is directed obliquely downwards and outwards, as may be seen by turning to the second figure in his first plate; moreover he proposes to give it the direction recommended by Dupuytren in his Thesis, published in 1813. 2d, Beclard performed the left section of the prostate with a sharp-pointed knife, cutting from without inwards. Senn, on the contrary, used a straight probe pointed bistoury, and accomplished the incision by cutting from within outwards.

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* Nouveaux Elemens de Pathalogie. Par C. C. H. Roche et L. T. Sanson, p. 522, Bruxelles, 1829.

† Traite de l' operation de le Taille Transversale ou Bilaterale, Par. Ollivièr, p. 238, Paris, 1826.

‡ Archiv. Gen. de Med. tom vi, p. 139, 309, 310, Ollivier Op. Cit.

‖ He sometimes used the female staff, and sometimes a blunt gorget as a conductor for the bistoury: but most commonly his finger. Ollivier, p. 239.

THIRD PART.

The disadvantages said to attend the bilateral operation, are first, the liability of wounding the bulb of the urethra, particularly in old subjects; and secondly, the unnecessary extent of the opening, in a majority of cases.

It cannot be denied, when the stone is small, hard, and irregular, that from the irritation it must necessarily produce in the bladder, the bulb of the urethra will, from repeated distention, the result of the vesical irritation, become enlarged, and that in old persons this will be particularly the case; yet a little consideration will show, how a surgeon may safely perform the bilateral operation without wounding the bulb of the urethra. Ollvier has given a plate exhibiting this enlargement;* but with all due deference, I must say that in the numerous dissections I have made of these parts, in persons, five of whom had been afflicted with stone, I have never found the dilitation so great, as the surgeon of Angers has represented it. He says that in such cases we cannot reflect the bulb in the same manner as in the lateral operation, because it is bound down by a *raphe aponeurotique.*† It appears that Beclard adopted the same opinion; for he thought that the bilateral operation was best adapted to children, because in them the bulbous portion of the urethra is less developed and farther removed from the rectum. However it appears to me, that after the integuments, cellular substance, and inferior perineal facia are divided, the operator can avoid wounding the bulb, be it ever so enlarged, by dissecting towards the membranous portion of the urethra on the left side of the rapha; then, while with the fore finger of his left hand, he hooks up the bulb, he can with all possible safety and expedition, carry a knife beneath it, and sever the *raphe aponeurotique*—this procedure I have adopted and safely accomplished without the slightest difficulty. I am also unwilling to acquiesce in the opinion, that this operation is best fitted to children; certainly in them the bulb is no obstacle to the operation, nor do I conceive it to be in any case. The marked advantage of this operation is, that it facilitates the extraction of a large stone.‡ Now, as a general rule, in all the operations for stone which I have performed, as well as in those I have seen others perform, the calculi have been smaller in children, in proportion to the size of the bladder, than in adults and old men; moreover, it is admitted that the neck of the bladder is more dilatable in proportion as the subject is younger; therefore I am strongly disposed to believe that the lateral operation is more particularly suited to the young subject. I am aware that the urethra, and particularly its bulbous portion, is larger in the adult and old man, than in the child; but the great dilatability of the prostate in the latter, with the same extent of incision, affords more space for the extraction of the stone. This fact I have convinced myself of, by repeated trials on the dead body.

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* Op. Cit. plate vi.

† Op. Cit. p. 245.

‡ I have seen, in an emaciated boy, aged seven years and three months, a stone so large as nearly to fill the whole bladder. Dr. Ballinggal, Professor of Military Surgery, in Edinburgh, relates a case where he performed the high operation on a boy, in consequence of the large size of the stone. Clinical lecture, 1827.

Before I operate, I not only use the sound to determine the size of the stone, but lest a number of stones, or a small one lodged in the neck of the bladder should impose on me the belief that the calculus is large, I make a cautious examination per anum; then if I find the prostate sound, and the stone of moderate size, (not larger than a pullet's egg,) I perform the lateral section with a straight probe-pointed bistoury, directed obliquely outwards and very little downwards, taking care never to exceed the limits of the prostate, and trusting to a slow and steady dilitation for an ample opening. If, however, the stone is large, or the prostate indurated and thickened, I have recourse to the bilateral operation. I must nevertheless admit, that I have met with a case where I supposed, in common with three other surgeons, that the stone was large; but when extracted it was found, to our great surprise, not to be more than one-third the size previously conjectured by us. When the perineum is short, or the prostate enlarged, mistakes must sometimes arise; but in the majority of cases, a person of ordinary tact can form a pretty exact idea as to the size of the stone by examination per anum.

As to the extent of the incision being an objection to the operation, I think it will be readily admitted by the anatomical surgeon, that if it does not traverse the base of the prostate gland, no apprehensions need be created as to hemorrhage, bad suppuration, sloughing, or urinary fistulæ. This I shall prove more fully in the sequel of this paper.

The advantages of this method of operating, are, that we make a more direct and larger opening into the bladder, without cutting through the base of the prostate gland, than in the lateral operation, at the same time we avoid all risk of wounding the rectum, pudic arteries, and ejaculatory ducts.

I am now satisfied that when the calculus is moderately large, it cannot be extracted by a lateral section of the prostate, which does not extend through and beyond its base. It may be presumption in me to offer this opinion, in opposition to that of the veteran Scarpa. He says that the neck of the bladder is more dilatable in children than in adults, and that the vesical orifice of the urethra is larger in proportion as the subject is older.[*] That the diameter of the urethra in a man of thirty years of age, is five lines near the orifice of the bladder, four in the middle part, and three at the extremity of the prostate.[*] That the prostate is a little more than two lines thick at its extremity, four at its middle part, and six, or even eight at its base, where it embraces the neck of the bladder.[†] That in the middle sized adult from eighteen to twenty-five years, the thickness of the base of the prostate is about two lines less than in the man of forty years and of high stature.[‡] That for the extraction of a stone of ordinary size, it will be sufficient to cut the body and base of the prostate only for two lines in children, and to a depth less than five in aged persons,[||] practising always a steady and moderate dilitation of the parts, before introducing the forceps. That, if the stone be very voluminous, (its small diamter exceeding more than twenty lines) we ought not to extract it by the perineum, because the incision necessary in such a case, would extend beyond the base of the gland, and the consequences would be infiltration of urine, gangrenous abscesses, and fistulæ, between the bladder and rectum.

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[*] Mémoir sur la Taille Latéralle, Traduit de l'Italienne, par C. Ollivier, p. 8, Paris, 1826.

Now as to the dilatibility of the commencement of the urethra, particularly in children, to the enlargement of it in old subjects, and the consequences of an incision carried beyond the base of the prostate gland, I readily acquiesce;[§] but that a stone not more than twenty lines in its smallest diameter, can be extracted through the section recommended without laceration, is to me incredible. For, when the bilateral operation is perfectly transverse, we can make an incision of eight or nine lines in extent, and thus obtain an opening, which will permit the extraction of a spheroid of sixteen lines in diameter.[**]

When the incisions are made obliquely downwards, we form a triangular flap of the inferior part of the prostate, the base of which is eighteen lines. When this flap is depressed, we leave an opening of a triangular form, of which the perimeter is formed by the base of eighteen lines, by the two sides of ten lines each, which together make twenty lines, and by the superior half of the urethra, which measures six lines; the total amounting to three inches and eight lines, consequently less than the opening obtained in the transverse bilateral operation.*

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[*] Senn says that the vesical orifice of the urethra is four lines in diameter, Op. Cit. p. 17.

[†] Senn says, "Quant à son épaisseur, elle est assez difficile à bien préciser, parce qu'elle va en diminuant du centre vers la circonférence. Dans les premiere point ou dans la partie traversée par l'urètre, elle est de 10 à 12 lignes environ.

[‡] Op. Cit. p. 15 and 16.

[||] Op. Cit. p. 8. An incision of seven or eight lines may be made outwards, one eight or nine downwards and outwards, and still enough of the gland will remain behind to bear a moderate dilitation, Senn, after speaking of the height and thickness of the gland, says, "Mais il est d'autres dimensions importantes à connaître, ce sont celles mesurées par des rayons ayant pour centre commun l'urètre; c'est de ce point, comme on le sait, que partent les incisions pratiquées dans les différentes méthodes de taille sous-pubienne. Les voici telles que je les ai rencontrées un grand nombre de fois sur le cadavre. De l'urètre à la partie inférieure et moyenne, 7—8 lignes. De l'urètre directement en dehors, 9 lignes. De l'urètre à la partie inférieure et externe, 10—11 lignes."

[§] Op. Cit. p. 8, 9.

[**] Senn, Op. Cit. p. 21. We include in this calculation, the vesical orifice of the urethra, (12 lignes.)

From this contrast it is evident, that when we open the neck of the bladder obliquely downwards and outwards, in the bilateral operation, we make a large incision and obtain less advantage, than from the transverse operation, in which the division is less by two lines.

When in the bilateral operation the left side of the gland is divided obliquely downwards and outwards, and the right side horizontally as recommended by Senn, in the *Taille bilateralle modifée*, the two incisions leave an olivary opening situated obliquely from right to left, and from above downwards, of which the perimeter is fifty-two lines; consequently more ample than either of those obtained by the other operations, and capable of admitting a sphere of eighteen lines in diameter.†

From what we have said respecting the measurements of the prostate, it will be observed that in these different operations the incisions are prolonged to the very base of the gland. Now if, instead of making a transverse incision for nine, and an oblique one for ten, we limit the first to seven, and the second to eight lines which is as extensively as we ought to divide the prostate to secure its base entire; we will diminish the largest opening that can be made in the bilateral operation to forty-eight lines, which, without stretching, will just permit the extraction of a stone of fifteen lines, in diameter; and by dilitating this opening, we may succeed in extracting a stone of twenty lines in diameter, or perhaps a line or two more,—through an opening much larger than that recommended by Scarpa. Therefore, I think, Scarpa has rather overrated the size of the stone which can be extracted through a lateral opening of the prostate, not traversing its base—extending but for five lines into its substance. Still, I conceive he has done much good by shewing the danger of traversing the base of the prostate gland, and by insisting on its great dilatibility; but I cannot with some of my brethren, attach the honour of discovery to him on this score, for the celebrated Bromfield, taught the same doctrine. He says, "The point of the knife will then drop into the groove of the staff, and by drawing the knife in this situation towards me, I shall certainly make good the wound of the prostate, so as near two-thirds of it may be divided in the operation." Again, "I then turn the convex part of the gorgeret towards the wound made in the prostate, and glide the fore finger of my left hand in the concave part of the gorgeret, till it enters the bladder; by this means I easily and gradually dilate the neck of the bladder, which being done sufficiently, I withdraw my finger, and introduce the forceps."* Again, "Though almost all operators would gladly wish (by what I understand) to divide the prostate gland throughout its whole length, it is what I always chose to avoid. About two-thirds of it nearest to the membranous portion of urethra, I am convinced will be sufficient, and attended with more advantages than the cutting it entirely through; as the only obstacle, the stone meets with, is in that part of the gland; and as the neck of the bladder beyond that will dilate sufficiently in most cases without laceration; and as the wounded parts will sooner heal by the muscular fibres, which act as a sphincter, recovering their tone, than they would do, if the urine were constantly running through them; by this method of operating, and proper treatment of the wound afterwards, I do not recollect a single instance of a fistula remaining."†

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* For further information, see Senn, Op. Cit.

† Op. Cit.

FOURTH PART.

Having shown, in the last section, that the bilateral operation is, of all others, the best suited for the extraction of a large stone, I shall now offer a few brief remarks on the different methods which have been devised for accomplishing it, and finally, I shall describe the operation which I am in the habit of performing.

I believe that Chaussier's operation, with a double grooved staff, has never been performed on the living body. It occupies more time than any other, because the direction of the staff and knife must be changed for the second incision, and without the surgeon be ambidexter, he finds great difficulty in making the division of the right side of the gland.

In Dupuytren's operation, the sections are directed downwards and outwards with considerable obliquity, as may be seen from an examination of the second figure in the first plate of Senn's Treatise. The consequence of this disposition of the incisions, is, that we obtain a large opening without a proportionate advantage—or, the same extent of wound, made in a different direction, would permit the extraction of a larger stone. Moreover, from the curved form of the blades, the operator will be likely to cut the gland irregularly, if he does not depress his hand with a due relation to the length and curvature of the instrument—a movement only to be accomplished by chance or consummate tact.

In Beclard's last operation, as well as in the modified operation of Senn, the principle is certainly feasible, but it is a considerable objection, that the central, and right lateral part of the perineum, is not divided before the second incision is made in the prostate; for without it, there can be neither precision in the extent nor course of the section of the deeper tissues. Important organs are therefore less secure, than when the perineum is previously dilated, moreover, when the extraction of the stone is proceeded to, the gland being divided, but the soft parts in front remaining entire, some of the benefits of the bilateral operation are lost; for one of its manifest advantages results from the opening in the bladder being direct, a circumstance which greatly facilitates the extraction of the stone. Therefore, if the calculus be large, we are not surprised to find that there is difficulty in dislodging it, and that the parts, through which it has to pass, are more or less contused.

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* Page 233. † Pages 246, 247.

When reflecting on the bilateral operation, a few years since, it appeared to me that Beclard reasoned correctly when he said, "*si on trouve aux instruments qui n'incisent le col de la vessie qu'en sortant un avantage absolù sur les autres on prèfere ce derniere.*" With this view I constructed the instruments represented in the attached plate.

A full sized staff being introduced, I make a curvilinear incision over the anus, in every respect corresponding to that practised by Dupuytren; then, with a few strokes of the knife, I gain the back part of the bulb;* now holding this upwards with my left hand, I carry the knife between it and the rectum, and prolong the division of the fat, cellular tissue, and muscles of the right side, to the same depth as on the left. Having proceeded so far, I direct the assistant to carry the convex part of the staff fully into the wound, and then, with my fore finger, I conduct the scalpel into the groove of the staff, and divide the membranous portion of the urethra longitudinally† for half an inch. This being effected, I introduce the director into the groove of the staff, and taking the latter from the assistant in my left hand, I lower its handle, and push the director forward at the same moment, until it is lodged in the bladder; now holding it firmly into the arch of the pubis, I take the double cystotome,‡ introduce its beak into the groove of the staff, and project it steadily into the bladder. It is then withdrawn in the same direction as it entered, and the finger is conducted by the staff into the bladder. If the stone be of moderate size, I extract it, practising previously a slight dilation, if necessary: but if I find that it is very large, I introduce the curved knife, and dilate one or both sides of the wound to the desired extent.

I claim but little merit for the instruments just spoken of, because they had all been used before my time; yet, not altogether in their present form and combination.

Le Dran was in the habit of introducing a strait director on the curved staff, as a guide for the bistoury in dividing the prostate. Dante, Dease, A. Burns, Thompson and Peile, have used it for the same purpose, and A. Key, and many others after his example, have employed it, even without the curved staff; therefore I can claim no more than that, as far as I know, I am the first and only person who has used it as a guide to the cutting instrument in the bilateral section. The instrument I am in the habit of using on adults, is eight inches in length, with a handle of four, set off to the left side, at an angle of 138°. It has a large groove on its inferior surface, and is terminated by a button, which secures its safe passage in the groove of the curved staff to the bladder.*

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* See page 12.

† Senn recommends a transverse division of the urethra, but I can see no advantage in it.

‡ See page 18.

Beclard used a double gorget, in the operation described by him in the year 1813: however, I have modified this instrument very considerably, as may be seen by referring to the annexed plate. The handle, in my improved gorget, is four inches in length, and is in a line with the rest of the instrument. From the handle a solid bar of steel about the width of an ordinary staff, passes off, which at its distal extremity expands into two blades, each of which is two inches in length and fifteen-twentieths in breadth, they stand off from each other at an angle of 100°, and the cutting edge on each, is about an inch in length, finally the blades are terminated by a probe point, which is six inches distant from the handle.*

The dilating knife is somewhat like the instrument, used by Dupuytren in hernia, in so much as its blade is narrow and curved, with the cutting edge on the convex side; but its blunt extremity is very much elongated, so as to defend the folds of the contracted bladder from injury, during the dilatation of its neck. I was first in the habit of using the straight probe pointed knife, for this purpose; but having assisted a surgeon in the dissection of a patient, on whom he had operated for stone, and had used the probe pointed bistoury to dilate the wound, we found the under surface of the bladder wounded beyond the site of the incision, in the neck of this viscus. I then thought of the advantages that would accrue from prolonging the blunt extremity. The curved form of the blade by accommodating itself to the point of the finger, renders its management easy and sure. Its handle is four inches long, the blade three-tenths of an inch broad and one-tenth thick, and is divided into three parts, the cutting edge occupying the middle third.*

By the direction of the blades of the double lithotome, the incision passes exactly in the space between the lines representing the transverse and oblique operations before described, and by the dilating knife they can be prolonged to a greater extent than the transverse section of Senn—to ten lines if necessary.

The base of the flap will then be twenty lines, which makes it exactly of the same extent as in the modified operation of Senn, for the angle of the urethra as in this operation, does not in any manner take away from the measurement, it naturally possesses (12 lines.) Then it is evident that we can make the largest opening and in the most favourable position by the double lithotome, *which is safely conducted into the bladder*, on the straight staff, cutting the

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* See plate.

prostate to a definite extent, which, with Beclard, I conceive a decided advantage, and one which can never be accurately performed by the double bistoury, ***for with it, the depression of the hand has every influence.***

DR. STEVENS ON CONGENITAL HERNIA.

On the morning of the 9th March, 1831, I was called to see Wm. Mace, a puny and delicate child, 33 days old: its mother was said to have been syphilitic, and died nine days after the birth of the child. The infant, however, exhibited no marks of venereal affection. It was suffering from a strangulated serotal hernia, which had been incarcerated about thirty-six hours, when I first saw it: during this time it had had but one scanty evacuation per anum, and had repeatedly vomited a fluid which had the appearance and odour of fæces. The tumour was hard and painful, and efforts to reduce it were unavailing. The abdomen was tender to the touch, and the child seemed to be in considerable pain. Doctor Stevens was called in consultation; and in the evening he performed the operation. On opening the sack, which was formed by the tunica vaginalis, the testicle was exposed, and the epididymis appeared of a very dark colour. The colour of the protruded portion of intestine was a dark red, but it had not a gangrenous apppearance. On dividing the stricture, the child crying and struggling at the time, several fresh folds of intestine came down, and were returned with considerable difficulty. On account of the small size of the parts, the fingers could not be used in returning the protrubed intestine, and a silver instrument with a smooth rounded extremity was employed for the purpose. About an inch of intestine was pushed before the end of this instrument, during an expiration, and when an inspiration took place, a fresh descent was prevented by the pressure of the finger. The wound was brought together with sutures, a compress of lint was applied, and secured by a bandage. After the operation, castor oil was given to the child, an enemata were administered, and the bowels were freely evacuated during the night. The dressings were removed thirty-six hours after the operation, and the wound dressed simply with linen spread with cerate.

March 26th. No unfavourable symptoms has occurred since the operation; the wound is entirely healed, and the child seems to enjoy perfectly good health.

Alfred C. Post.

A case of Strangulated Hernia successfully treated by an operation; by HUNTING SHERRILL, M.D., *late President of the Dutchess County Medical Society, New-York.*

D. Carpenter, aged 35 years, the subject of this case, had been affected with hernia for many years, which had given him more or less inconvenience, as he had neglected the usual precautionary means, the use of a proper truss.

On the 7th of December, about 6 o'clock P. M. it became strangulated, and was attended with severe pain. The family physician, Dr. Church, was called in attendance, bled him copiously, and used judicious means to effect a reduction, all which proved unsuccessful. It was about 10 o'clock on the 10th when I arrived in consultation.

The tumour, which was confined to the groin lying over the pubis, was about the size of a large goose egg, and extremely hard; the pain experienced at the time was rather dull and distressing; he became anxious and very restless; the pain was increased when he lay on his back, but became more easy when sitting up. Some further means and the taxis, were used to effect a reduction, which also proved unavailing. Symptoms were increasing, and there appeared little or no prospect of relief from any remedy except an operation. Therefore it was thought advisable to recommend its immediate performance; and as death from a similar disease had recently occurred in the neighbourhood without the operation, the patient and his friends were pretty easily influenced in favour of our proposal.

The operation was commenced at three o'clock P. M., 21 hours after strangulation took place. The first incision commenced above the abdominal ring, and was carried down directly over the tumour to near the lower part of the scrotum. A few more incisions brought the sac into view; then, by a careful dissection, both it and the abdominal ring were exposed, when I was enabled to ascertain the nature and situation of the stricture.

By this time the tumour had increased in size, as the pressure and support of the integuments were taken off; a small opening was then made in the sack, into which a director was introduced and passed towards the stricture, then by a bistoury it was laid open. The contents of the tumour proved to be omentum, and a small twist of intestine.

On introducing the finger, the stricture could easily be felt. The director being passed through the ring, the bistory was introduced, and a portion of the tendinous fibres of the upper part of the ring were divided. The contents of the sack were now carefully reduced. A portion of the omentum, several inches in length, could not easily be returned, and was therefore cut away. The lips of the wound were now brought in contact, and retained by two sutures, adhesive straps, &c. He was taken to bed and kept cool and quiet. Adhesion took place readily, so that in a fortnight the wound had healed, and he was enabled to walk about the room; a truss was used to support the ring, and he returned to his occupation, complaining of very little inconvenience.

DR. M'COMB'S CASE OF CONGENITAL HYDROCEPHALUS.

Mrs. Chauncey, a coloured woman, was delivered, on the 26th of September, of a male child. Dr. J. Sickles, who attended her, observed that the head of the child was unusually large, and on examination, he found that it laboured under congenital hydrocephalus.

Nov. 12, Head measures nineteen inches in circumference, and thirteen from one mastoid-process to the other. The parietal bones are separated from each other between six and seven inches.

Nov. 24. Head measures twenty inches and a half.

Dec. 5. Head measures twenty-one inches and three quarters.

Dec. 11. Head measures twenty-two and a half inches, and fifteen from one mastoid process to the other. One pupil is contracted, and the other dilated, with twitching of the muscles, and tossing of the arms.

Dec. 21. In the presence of Dr. R. K. Hoffman, and Dr. J. Sickles, I made a puncture with a common bleeding lancet, in the posterior fontenelle, about one inch and a half from the centre, on the right side, and drew off about twelve ounces of fluid. The child rested much better this afternoon, than on any previous day.

Dec. 22. Child appears much better, less strabismus. It now, for the first time, appears to observe the light of a candle, bowels very regular, rests and nurses well.

Dec. 23. In the presence of Dr. B. Kissam and Dr. J. Sickles, I drew off thirty ounces of clear fluid. During the flow of the last ten ounces, I was obliged to stop it two or three times, in consequence of the debility produced; but reaction soon came on, and I continued the discharge as far as was considered safe.

Dec. 24. Considerable fever.

Dec. 25. Pupils contracted, cough, difficult breathing. At four o'clock on the next morning the child died. The parents would not allow of any examination. I would not have performed this operation, but for the hopeless state of the case, and the urgent solicitations of the parents; and as I had heard and read of cases favourable to the practice, I thought it only fair to give my patient the chance.

I shall embrace the opportunity given by Dr. M'Comb's case, and offer a few remarks on the disease which forms the subject matter of his communication;—These I shall arrange under four heads, viz:

1st, The brain is not disorganized in hydrocephalus.

2d, If the brain were destroyed, the manifestations of the mind would be annihilated.

3d, The measurements of some of the largest heads on record.

4th, Observations on tapping the brain.

1st. *The Brain is not disorganized in Hydrocephalus*—It was such cases as the above, that led the ancient physicians, and even some of those not far distant from our own day to assert, that some infants, and even adults, existed for years without a brain. Zacutus Lusitanus says he knew a child to live for three years without a brain; for on examination after death, he found water occupying the place of the brain, and the dura mater folded or doubled on itself. Lauffer found nothing in the head of a still-born child but water, in which he conjectured the brain had been dissolved. (Dissertatio de infante sine Cerebro nato, Hallæ, 1743.) Haller mentions the statement of Duverney, which amounts to this:—That in a hydrocephalic subject examined by him, there was no brain. However, without a denial is necessary to show his disbelief, he cannot be accused of fostering the absurd narration of Duverney. Morgagni criticised Duverney with that candour and severe acumen which ever marked his commentaries on predecessors and cotemporaries;—to be short, he never failed in such cases in finding the brain, but it universally assumed more or less a membranous form. This cerebral transformation had however been previously noticed by Vesalius. (Opera Omnia, 1, p. 16.) Tulpius, (Observat. Med., 8vo, 1716, p. 45.) Petit, (Memoires de L'Académie Royale de Sciences, 1718.) Hunauld, (Memoires de L'Academie Royale, 1740.) Bertin, (Osteology, tom. ii, p. 500,) and Vater, (Miscellanea Curiosa sive Ephemeridum Medico-physicicarum Germanicarum Academiæ-Cesareo-Leopoldinæ Naturæ Curiosorum, Decuriæ, iii., A. 9, p. 294.) We are however under lasting obligations to Gall and Spurzheim, for incontrovertable anatomical and physiological proofs, that the cerebral substance is not disorganized in hydrocephalic subjects. By laborious, cautious, and multiplied lacerations of the brain, they have clearly demonstrated, beyond all cavil, that each cerebral convolution is composed of two closely applied lamina, and consequently, that when the ventricles are distended with fluid, the surrounding convolutions suffering a pressure in the ratio of its accumulation, have their component layers separated, and changed gradually from their natural or vertical position, so as in time to assume a horizontal direction. Thus the brain really becomes unfolded, and presents the appearance, in extreme cases, so honestly described by Zacutus Lusitanus. Had Duverney and Lauffer the sagacity of Vesalius, Tulpius, and Morgagni, or the light of Gall and Spurzheim's discoveries in cerebral anatomy, to regulate their dissections, they would have discovered, *that the brain had not been dissolved, nor vanished from the sight of man;* and above all they would have avoided the sarcastic criticisms of their *petit* successors.

2d. *If the brain were disorganized, the manifestations of the mind would be annihilated.*—The hypostatic union of the two entities, body and mind, is admitted by philosophers, moralists, and divines. St. Thomas, (Contra Gentiles.) St. Augustine, (de lib. arbit.) St. Ambrose, (de operibus Christi.) St. Cyprian, (De Offic.) St. Crysostom, (Homil, ii, iii, super Epist. ad Heb.) and St. Gregorius Nyssenus, (De hominis opificio,) have advocated the connexion between the mind and the body.[¶]

Sir I. Newton says, "are not the sensible species of things, brought through the nerves to the brain, that they may be perceived by the mind present in that place."

Locke observes, "Perceptions can only be produced by impressions upon our senses, and some motion thence continued by our nerves to the brain, or the seat of perception."

Dr. Watts thus expresses himself: "It may be proper to observe, that there is a particular portion of the body which may be called the common sensory or palace of the soul."

I presume it is here unnecessary to prove that the opinions of the ancients respecting the seat of the mind, is untenable; of Aristotle, who placed the sentient soul in the heart; of Serveto, in the aqueduct of Sylvus; of Erasistratus, in the membranes; of Herophilus, Sylvius, Aurantius, Vieusseus, Willis, De Cartes, Bentekoe, Schellhammer, and Drelincourt, who assigned to it a habitation in some one part of the encephalic mass.

That the cerebral mass, is that part of the body through which the mind manifests itself, is easily proved by the following facts:—1st, Automatic life requires neither brain nor cerebellum. 2d, All parts of the body pertaining to vegetative life, may be destroyed without suddenly annihilating the mental faculties. 3d, If the brain be compressed or destroyed, its functions are deranged or annihilated. 4th, Animals are intelligent in proportion to the relative size of the brain, and in the same ratio as its parts are multiplied. 5th, When the brain is imperfectly developed, as in idiots, the mind is defective. 6th, The intellectual faculties are weakened by age, and deranged by sickness, in the same ratio as the brain is changed; and lastly, the manifestations of the mind are secondary to the growth of the brain. On this subject Dr. Watts observes: "The only reason why we see so little evidence of thinking in infants, is not for want of speech, or signs to manifest thought; but because their experience is so small, their judgment so weak, and the memory so short and imperfect, by reason of the exceeding softness of the brain, which can hardly retain any traces. As the brain grows harder, and more capable of retaining traces, so the memory is confirmed and the judgment strengthened, and taught to act, and the efforts of thinking and a reasonable nature appear." Denham, in his Physico-Theology, says, "The brain is in all probability the seat of the immaterial soul, and differs from that of quadrupeds, as it is larger, affording more room for so noble a guest."

If then the brain be the instrument by which the mind exercises its powers during its mortal affinity, it necessarily follows, that if it be destroyed by chronic hydrocephalus, the manifestations of the mind ought to be annihilated also. Walter of Berlin, and Ackerman of Heidelberg, admitted this position, and in confirmation of it, have asserted that the cerebral mass is disorganized, and Walter has actually endeavoured to maintain, that in this malady the faculties of the mind are destroyed. We cannot assent to this statement, for Tulpius, Camper, Gall, Spurzhiem, Home, and a host of others, have observed extreme cases of hydrocephalus, where the brightest gems of the mind shone in unsullied splendour. I myself, have seen a case, and for aught I know the person still lives, where the head measured thirty-five inches at its greatest circumference, and the boy then nine years old, possessed as much intelligence as others of his age, and was endowed with a serenity of temper seldom met with in youths.

3d. *The measurement of some of the largest heads on record.*—The case related by Dr. M'Comb, is the most extensive for the age of the child, that I have seen or read of. Dr. Monro says, " I have met with an instance of a child that died when sixteen weeks old, whose head measured, at its greatest circumference, twenty-four inches," (Morbid Anatomy of the Brain, p. 29.) In a person who laboured under the disease for twenty-six years, he found the head to measure forty-three inches, (p. 20.) At Copenhagen, Drs. Gall and Spurzheim, saw a girl of thirteen years of age, whose head measured twenty-five inches in circumference, nineteen from ear to ear, and the same from the root of the nose to the neck. At Augsburgh, they met with a girl, whose head may have contained four pounds of fluid. In London, Spurzheim, examined a hydrocephalic head thirty-three inches in circumference, twenty-four and a half from one ear to another, and twenty-three and a half from the root of the nose to the nape of the neck. Messrs. Laumeyer and Nuffer at Fribourg, in Brisgau, possess the skull of a girl aged seven years, whose brain contained seventy ounces of water. Dr. Maler of Carlsruhe, observed a case, where ten pounds of fluid had accumulated in the brain. (Gall and Spurzheim, Anatom. et Physiolog. du systeme nerveux en general et du cerveau en particulier.) Cook reports the case of a child eleven years of age, whose head measured thirty-five inches. (Ed. of Morgagni, p. 20.) some other extraordinary cases are recorded, by Michaelis, Genga, Wepfer, and others, and according to Cook, the head has been found to contain twenty-four pints of fluid.

4th, Observations on tapping the brain.—Severinus recommended puncture of the brain in hydrocephalus when other remedies proved useless. E. Ferdinandus, Wepfer, Hildanus, and Monro, secundus, have seen the most dreadful symptoms and even death follow this operation. Dr. Vose of Liverpool, has related a case, very favourable to this practice; (Medico, Chirurgical Transactions, vol.

ix. part 2.) but after the operation had been repeated several times, and the bones began to unite, the symptoms increased, and soon proved fatal. Rossi, a surgeon of Turin, reports the case of a patient, aged twelve years, who had much fluid effused into the cavities of the brain, in consequence of a blow on the head. He says, "J'y fis une ouverture avec la lancette, et je tirai par là environ six livres d'eau à reprises dans l'espace de vingt jours le malade fut sauve."

In the London Medical Gazette for April last, it is reported that Dr. Conduit, operated on two cases successfully. From the account there given, it appears to me, that in one case the child was only relieved, for it is admitted that the enlargement of the head did not subside. In the other, portions of brain are said to have been discharged, and that in a few days the child had recovered. I must candidly confess that I am not credulous enough to believe this, and I think it would be desirable to hear more about the patients of Rossi and Conduit, before we stamp them as successful.

I conceive there are serious objections to puncturing the brain with lancets and such instruments, and also to the evacuation of large quantities of fluid; but it is not my intention, at present to enter into an *explanation* of these objections, suffice it to say, that the consequences of such practice are generally fatal; moreover, wounds of the brain, even of small magnitude, generally produce deliquium, vomiting and convulsions.

The fluid in hydrocephalus is sometimes outside the brain. This fact was formerly denied by Gall and Spurzheim; but afterwards they retracted their opinion, in consequence of having observed cases where the fluid was collected between the brain and dura mater. Spurzheim, in his *Observations sur la Phrenologie*, speaks of a case that he examined with Dr. Roberton of Paris, in which two pounds and a half of fluid were collected between the dura mater and arachnoid membrane, whilst the brain covered with an adventitious membrane, lay compressed at the base of the cranium. Breschet has observed two similar cases; and in the head of James Cardinal, aged thirty-five, who died in Guy's Hospital in 1825, Messrs. Key and Morgan, surgeons to that hospital, discovered nine pints of water between the brain and dura mater, and nearly a pint in the lateral ventricles. In the year 1824, I examined with the late Professor Todd of Dublin, a female, aged ten years, who had four pints of fluid accumulated between the arachnoid membrane and dura mater. In this case as in that of Roberton, Key, and those of Breschet, the brain lay at the base of the skull.

In such cases as these, puncture of the brain might be attended with advantages, and this was admitted by Monro secundus; but the difficulty rests in the fact, that we cannot *à priori* ascertain the situation of the water.

I have myself, treated two cases by puncture, with a large cataract needle, never evacuating more than three or four ounces of fluid at a time, and then using pressure to prevent deliquium. I operated on one patient seventeen times, and on the other four, in neither was the practice successful; but in both it always afforded relief. Therefore I believe that we ought merely to view puncture as a palliative means, and when we practise it, use a cataract needle or some other such instrument—to evacuate but a small quantity of the fluid at a time, and then make pressure in proportion to the quantity drawn off.

Where the size of a hydrocephalic head renders parturition difficult, it becomes desirable to diminish the mass by puncture.—*Editor.*

CLINICAL REPORTS.

I purpose to insert in each number of this journal, cases from note books, which I have kept carefully for eleven years. It is also my intention to extract largely from reports which were submitted by me to the Army Medical Board, during the period I was attached to the General Military Hospital of England.

A case of extensive disease of the left shoulder.

Private Michael Brett, of the 8th dragoons, æt. 25, was admitted into the Surgical Division of the Hospital on the 21st March, 1826, having many large and unhealthy ulcers on his left shoulder, and the anterior, superior, and outer part of the corresponding side of the thorax, communicating with winding sinuses, some leading to the shoulder joint, and others to the outer part of the clavicle, and anterior portion of the spine of the scapula, and acromion process. Twelve weeks before his admission, he sustained a fall from his horse, by which his shoulder was much bruised: it became swollen and painful, and on the fourth day after the accident, the surgeon of his regiment detected an abscess immediately below the acromion process, which he evacuated by an opening in the line of the fibres of the deltoid muscle. On examination, the purulent sac was found to communicate with the cavity of the joint. Many small abscesses now formed in rapid succession in all the surrounding parts, and in the same order degenerated into unhealthy ulcers, discharging a thin and offensive matter. All the ordinary remedies were administered, and various local applications made use of without the least advantage. When he came under my care, he was hectic, emaciated, debilitated, and suffered from alternations of diarrhœa and colliquitive perspirations. I had recourse merely to palliative means. He pined away, became affected with cough, difficult respiration, and mucous expectoration—and died exhausted on the 5th of the ensuing August.

Sectio Cadaveris.

Head—No disease.

Thorax—The superior part of both lungs contained many crude tubercles; the summit of the left adhered to the walls of the chest by adhesive matter, which may have been effused for two months. Heart sound but of small size.

Abdomen—Liver indurated and enlarged, when cut into, its acini appeared compressed, and its celular structure thickened—Gall bladder contained much dark green bile—Spleen twice its natural size, and very brittle.—Stomach and duodenum enflamed.—Ilium and colon studded with scrophulous ulcers.—Mesenteric glands enlarged; many of them were softened down into white pulpy masses.

Shoulder—All the sinuses concentrated themselves in the shoulder joint, the synovial membrane and cartilages of which had been destroyed. The upper part of the humerus, scapular extremity of the clavicle, and acromion process, were in a state of partial caries, and spiculated exostoses surrounded the ulcerated tracts.

This is a very interesting case.—1st. We observe an uncommon fact,—from a contusion, the synovial sapsule of the thickly covered joint became inflamed and suppurated, and so quickly and largely too, that on the fourth day the matter pointed, and was evacuated through the massy deltoid, below the acromion process. 2d. The matter was so abundantly secreted, that all of it was not evacuated through the opening, but burrowed outwards under the deltoid muscle, and by its accumulation and consequent pressure affected the anterior part of the spine of the scapula. It also passed inwards under the deltoid and great pectoral muscles, produced disease in the clavicle, and pointed in different directions between them and even through their fibres. 3d. The irritation of the joint continuing, its synovial membrane and cartilages were destroyed by ulcerative absorption, and even the bones themselves did not escape untouched; for the head of the humerus and glenoid cavity of the scapula suffered to a great extent, and the adjacent parts of the humerus, scapula and clavicle had their action so much increased, that they or at least their investing membranes assumed additional energy, and gave rise to spinous exostoses, which still more irritated the surrounding parts. From all this concentrated irritation, the abscesses did not granulate and cicatrize; but were converted into sinous ulcers, which daily threw out much thin and fœtid matter. Nature struggled to conquer the disease, and nearly exhausted in the combat, she, from repeated and fruitless exertions, called into play that scrophulous disposition heretofore dormant, which did not only keep up the disease of the shoulder joint, but attacked the lungs and intestines. 4th. That portion of the left lung which corresponded to the diseased shoulder, adhered to the walls of the chest—this adhesion succeeded to the disease of the shoulder, and was the result, in all probability, of some sympathetic action; for the parts between it and the external disease were healthy, and consequently we cannot ascribe it to any morbid propagation by continuity. 5th. The cellular structure of the liver and spleen was condensed and thickened; because in the many rigors which he had, the blood was thrown, as in intermittent fevers, on these organs—this unusual and unnatural pressure produced an increased action in the nutrient vessels, and the result was a condensation and enlargement of the whole of both organs. 6th. His intestines were in the same state, as in the majority of victims to tubercular degeneration of the lungs; but though his lungs contained some crude tubercles, still there was neither ulceration nor suppuration in or about them, and as in pulmonary phthisis (tubercular) the disease of the intestines is secondary to that of the lungs, how are we to explain the inverse order observed in the case before us? In no other way than this—that his bowels were affected with an irritation which disposed to diarrhœa early in the disease, and this irritation being continued, summoned forth the scrophulous action in its neighbourhood; and in the same way only, can we account for the disease of the mesenteric glands. It cannot be supposed that the ulcerations existed before and gave rise to the diarrhœa. 1. Because ulcers in the intestines do not always induce diarrhœa. 2. Because it has been proved by *post mortem* examinations, that diarrhœa has succeeded to local diseases, where the intestinal membrane has been entire. 3. Because we know that diarrhœa, continued beyond a short period, inevitably ends in ulceration, and, 4. Were the intestines ulcerated from the beginning of the diarrhœa, he, in all probability would not have lived half the time. 7th and lastly, the tubercles in the lungs mechanically obstructed the entrance of air, so as to induce difficult respiration, and by the irritation which they created in the mucous membrane, gave rise to the cough and expectoration, which took place during the latter weeks of this poor man's life.

Cases of Inflammation of the Parotid Gland.

Edward Gallagher, aged 46, of the Third Veteran Battalion, was admitted on the 21st of May, 1826. He had pain in the region of the right parotid gland, extending to the side of his head—the superincumbent integuments wore an erysipelatous blush; but very little tumefaction was observable—he had deafness of the corresponding ear, and the most excruciating torture was produced by the slightest triturating motion. These local symptoms were accompanied with high constitutional disturbance. He could assign no cause for his disease, but stated, that, for the last twelve months, he had occasional lancinating pains, and trivial swellings in the part affected. On examining his mouth carefully, I found that he had two unsound teeth on the corresponding side of the lower jaw.

Two dozen leeches were applied, and a succession of cataplasms and fomentations—a calomel bolus was administered, and followed by a purgative draught. On the following day, I found that he had some delirium during the night, his pulse was getting up, and the other symptoms of increased irritation were making fearful progress. The tumefaction at the angle of the jaw had not increased much, but the erysipelotous inflammation wore a deeper hue, and was more diffused—extending upwards towards the vertex, and downwards to near the clavicle. He complained of insupportable pain in the region of the inflammation, and it was with the greatest reluctance he answered questions, as the suffering produced by the motion of his jaw was greatly aggravated.

I divided the integuments and fascia, for the extent of an inch and a half, in a line corresponding to the anterior edge of the mastoid process of the temporal bone. On performing this section, the lips of the wound flew asunder, and the body of the gland was partly projected. Warm fomentations and cataplasms were employed. He expressed himself as much relieved, and from this period all local and constitutional symptoms began to subside. He was discharged the hospital, free from complaint, on the 17th of June.

Private Sampson Kington was admitted into Hospital on the 25th January, 1827, with cynanche tonsillaris. Under the usual treatment all symptoms, save difficult deglutition, abated. On the 14th February, he complained of dreadful pain behind the angle of the jaw on the right side, became delirious, and an erysipelatous blush spread over the side of his neck and face. He was bled both locally and generally, and the antiphlogistic method in other respects was closely adhered to. When the erysipelas subsided, he became very weak and complained of fullness and pain at the angle of the jaw. I visited him on the 24th, in company with Assistant Staff Surgeon Nevison, who had attended him from the commencement, and found him labouring under alarming debility; being totally unable to assist himself, his pulse was almost imperceptible, his appetite gone, and I was informed that his only sustenance for some days had been port wine. On examining the right parotidean region, I found that a quantity of matter had collected beneath the cervical fascia, I therefore cut downwards by the edge of the sterno-mastoid muscle, and laid open the purulent collection. About four or five ounces of matter were evacuated,—he obtained someit but relief, was only temporary, for the debility continued to increase until the evening of the 28th when he died. On examination after death, a cyst equal to six ounces occupied the place of the parotid gland, a few particles of which could only be discovered.

The reader will readily discover from the history I have given of these cases, that the parotid gland was the organ affected. In the case of Gallagher, the inflammation did not terminate in suppuration; but in that of Kington, this termination did take place. We have seen that Gallagher was not only feverish, but delirious, though leeches and fomentations were applied, and his bowels freely purged—that when the parts were divided as far as the gland, he got immediate relief, and soon recovered. In Kington's case, delirium also existed, and we may fairly conclude that this was anterior to the formation of pus. In both, the skin wore an erysipelatous hue; there was slight general tumefaction, but nothing like that limited redness and circumscribed swelling which marks phlegmonoid inflammation. How then are we to explain all these peculiarities? In no other way, but by examining the structure of the parts. Mr. Colles is the person to whom we are indebted for a proper explanation of the phenomena pertaining to inflammation and suppuration of the parotid gland—he says:—

"By pinching up and drawing this fascia (cervical) with your forceps, you observe, that it passes from the neck down upon the thorax, without having any attachment to the clavicle or sternum. You also observe it stretching over the surface of the parotid gland, passing above the upper end of this gland, and blending itself with the aponeurosis of the temporal muscle, on and above the zygomatic process. This fascia is very closely connected with the cartilaginous tube of the ear, being of a close and firm texture where it joins the inferior portion of this tube; but where it joins the anterior part of the tube, it is of a more loose and open texture—being here perforated by many holes, obviously for the transmission of nerves and blood-vessels. Anteriorly to the masseter muscle, this fascia seems to be implanted into the base of the lower jaw. While this fascia lies exposed to your view, consider well what influence it may have upon the diseases and operations to which the different parts lying under it are subject. And, first, in inflammations and suppurations of the parotid gland. In such cases, even though the quantity of matter be great, yet this fascia will prevent the elevation of the swelling from being considerable, especially towards the upper end of the gland, because here the attachments of the fascia are of very considerable extent and firmness. The nature and unyielding texture of this fascia, will not permit the matter to point as soon as formed in the upper extremity of the gland; nor will it allow us to ascertain satisfactorily, the presence of the fluid by the unequivocal test of fluctuation. If, then, we be ignorant of the structure and connexions of this fascia, we shall probably hesitate to make an opening into the tumour, and by our indecision and timidity, shall subject our patient to sufferings, as intolerably severe as unnecessarily protracted."

We can now understand why Gallagher experienced such decided relief from the division of the fascia, and it is not unreasonable to conclude that Kingston might have recovered, had the nature of the disease been more early discovered.

I deposited a temporal bone in the Medical Staff Museum, which I removed ten years ago, from a man, the outlines of whose case I shall briefly sum up. Six months before his death he had an attack of fever, which was succeeded by pain at the angle of the jaw, difficult deglutition, and constant head-ache; these symptoms increased, and four months before his death he had erysipelas of the side of the head and neck—then he became worse—a general swelling of the parts behind the angle of the jaw took place, and the pain increased much. He now grew delirious, was treated actively but without effect; for nervous symptoms set in, he became really miserable and died convulsed. I examined the body, and found a deep seated abscess in the parotid, communicating with the cavity of the cranium by a hole in the petrous portion of the temporal bone, large enough to admit the point of the finger.

My friend Dr. Frederick Clarke, Assistant Inspector of Military Hospitals, informed me that in the peninsular war, he observed a case exactly like that which I have now cited.

A fatal case of Enteritis, produced by stricture of the Omentum.

Private William Hardy, of the Forty-second Regiment, aged 37, was affected with enteritis at Gibraltar, in the beginning of 1826. He arrived in England in the following April. Shortly after this, he became affected with symptoms of colic, which were so severe, that he was admitted into hospital on the 16th of May. By venesection and purgatives, his symptoms were conquered, and in a few days he was discharged well. He was again admitted on the 27th, for continued fever, during the termination of which, he complained of pain in the region of the umbilicus. This affection subsided under appropriate treatment, and he was discharged convalescent on the 21st of June. On the 24th of July, he was again admitted, labouring under violent tormina and tenesmus. Twenty ounces of blood were taken from the arm, and one ounce of castor oil with 40 drops of opium were administered. On the 25th, his pulse was rapid, hard, and small; he laboured under nausea, and vomited a brownish fluid; his abdomen was tense and painful; no evacuation had been produced per anum; the body was flexed, as well as the lower extremities; he lay on his side, and remained in the same position constantly; finally, his countenance was griped and anxious. The bleeding was repeated; large doses of calomel and opium were administered; leeches and anodyne fomentations were applied, and an emollient enema given every two hours. Towards evening, the pain of the abdomen began to subside, but the vomiting continued, and his bowels remained unmoved—he laboured under great prostration of strength; his pulse was almost imperceptible; his countenance cadaverous; he had hiccough, and the surface of his body was bedewed with a cold and clammy perspiration. To be short, these symptoms continued to increase until the following morning, when the fatal issue took place.

Sectio Cadaveris.

Head, }
Thorax, } No disease.

Abdomen.—The great omentum was connected by ancient adhesions to many of the viscera, and its right extremity was attached to the peritoneum in front of the lowermost lumbar vertebra. All the small intestines, save the duodenum, were so entwined in this process of the membrane, that it was only after repeated efforts I succeeded in forcing a column of water through the viscera by means of a powerful syringe. The strictured vescera were of a deep red colour; but I could neither observe effusion of lymp on the peritoneal surface, nor thickening or gangrene of the substance of the intestine. The convex surface of the liver was firmly incorporated with the diaphragm, and the left part of the arch of the colon adhered, after the same manner, to the great extremity of the stomach, and also to the spleen.

We shall now make an analysis of this case.—*Hardy* had inflammation of the peritoneum in Gibraltar, which gave rise to the adhesion of the liver to the diaphragm, of the colon to the stomach and spleen, and of the omentum to many of the viscera, and to the peritoneum in front of the last lumbar vertebra. These adhesions deranged the functions of the membranous viscera, and gave rise to the symptoms of colic, for which he was admitted into hospital on the 16th of May. It is more than probable that some of the small intestines, on this occasion, were entangled in the portion of the omentum, which was fixed to the peritoneum in front of the spine, and that they again assumed their wonted situation, in consequence of the increased peristaltic action, which was created by bleeding and purgatives. The abdominal pain which he suffered, during his convalescence from fever, in the beginning of June, may have arisen from the same cause; for the inference is fairly deduced from the fact, that he died in consequence of strangulation, caused by the portion of omentum alluded to. The fatal attack set in with tormina and tenesmus, and in a few hours he had well-marked symptoms of enteritic inflammation: pain of belly increased by pressure, constipation, nausea, vomiting, griped countenance, flexion of the trunk and lower extremities, fixed position, with a quick, small, and hard pulse. These symptoms did not continue longer than those which ushered in the attack, but gave way—the pian in the belly subsided, hiccough set in, his pulse became almost imperceptible, his countenance cadaverous, the surface of the body was bedewed with a cold, clammy perspiration, and the *vigor corporis atque animæ* began, *pari passu*, to disappear. It must not be forgotten, that the constipation and vomiting persisted to the close of life. This sudden and well-marked crisis, would lead a physician to suppose that gangrene had taken place; but the *post mortem* examination, conclusively proved the following facts:—1st, that the stricture blocked up the alimentary canal, and consequently produced the antiperistaltic motion; prevented fœcal discharges; gave rise to constant nausea, hiccough, and repeated vomiting. 2d, that so much intestine was strangulated as to produce collapse, even before the serous membrane had exuded lymph.* In this case, all curative means were useless, and as the existence of stricture, and consequently its site could not, *a priori*, be ascertained, no chirurgical alternative was admissible; and even though such interference might be desirable, had the nature of the case been known, still, the result would probably have been fatal, and this uncertainty could alone justify gastrotomy.

A Scirrhous Lachrymal Gland successfully removed.

On the 2nd of July 1827, James Moore, aged 67, requested that I would afford him some relief, for an affection of his right eye, of three years standing. On examination, I found that there was considerable exophthalmia, total loss of vision, conjunctival congestion, and an inability to close the lids of the left eye, caused by a firm and irregular tumour, attended with constant lancinating pains, situated in the upper and outer part of the orbit, corresponding to the situation of the lachrymal gland.

The nature of his complaint being very evident, I proposed the removal of the diseased gland, to which the old man consented. Assisted by Staff Surgeon Dawn, I divided the external commissure of the lids, and reflected them from the anterior surface of the tumour; a double hook was then passed into the diseased mass, by which it was carried downwards and inwards, whilst with the handle of a scalpel, some firm membranous connections between it and the roof of the orbit were broken down; but when conducting the dissection at its back part, a vessel of considerable magnitude sprung, and poured out blood freely; which from its situation I found impossible to secure, and the narrow and deep cavity being filled with blood, prohibited me proceeding with the dissection. Therefore with as much quickness, as was compatible with safety, I extracted the tumour, by lacerating the cellular tissue between it and the globe, from before backwards—a procedure, which was much facilitated by bearing the gland upwards and outwards, and the eye downwards and forwards. The orbit was then examined; no remnant of disease could be discovered, and the vessel above alluded to had ceased to bleed. The eye was then placed *in situ*, and retained there by a compress and bandage, the external commissure being previously united by a point of suture. The wound soon healed, and in about three weeks the patient returned to his home, the eye holding its natural position, though his vision had not returned.

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* Hereafter, I purpose to explain the rationale of sudden death from abdominal injury without lesion, and also the unexpected collapse which often occurs from disease of the contained organs.

Guerin, Warner, Travers, Todd, and O'Berne, have each extirpated the lachrymal gland, when affected with carcinoma; but I am not aware that the operation has been performed by any other person. However, in opposition to Beer and Weller, I believe there are now few hospital surgeons, who would decline the performance of this operation, and the only way in which I can account for the paucity of such cases, is, that scirrhous of the lachrymal gland, as a primary affection, is a very rare disease.

The gland was of the size of a pullet's egg, dense as cartilage, of a yellow colour, crossed by firm bands, and contained in its substance two cysts, each of the size of a barley corn, filled with a brownish matter of the consistence of cheese.

Chronic Anthrax near the Anus.

Private Richard Jones, aged 59, of a weakly habit and impaired constitution, was admitted into hospital on the 12th of July, 1828. In October, 1827, he began to feel some uneasiness in the anal region near the right hip, attended with slight swelling, which increased gradually, so as to render him unable to do his duty. In this state he continued for some months, previous to his admission, at which period he had *une suppuration gangreneuse*, on the right buttock, near the verge of the anus. On the surface of this dusky tumour, possessed of little tension, there existed two openings which discharged a small quantity of ill conditioned pus. His pulse was slow and unequal, his spirits depressed, and his health had been very indifferent for some years. I laid open the diseased mass throughout its perpendicular extent, and found that the cellular membrane was greatly condensed, partly gangrenous, and that there were two cavities, each about the size of a filbert, with which the openings above mentioned communicated. Warm fomentations were applied, followed by stimulating dressings, and particular attention was paid to his digestive organs. He took five grains of Plummer's pill every night, and a draught consisting of the sulphate of magnesia, infusion of gentian and compound tincture of cardamons every morning. The sloughs were soon cast off, the type of the inflammation changed, and the wound rapidly healed.

It may not be useless to state, that this case was somewhat different from the anthraceous inflammation described by Pott, in so much as it followed a more protracted course, with less local devastation and constitutional disturbance. I once had an opportunity of witnessing the case of a man, similar to that which I have now cited. He, though not advanced in years, had destroyed his health by gluttony and intemperance, and from some vicissitudes in life, was compelled to relinquish his original habits. An anthrax formed on his back, which advanced very slowly for fourteen months, and for a long time he resisted all persuasions to have it laid open; however being worn out by unremitting suffering, he sought for and obtained admission into the Richmond hospital, (Dublin.) A crucial incision was made into the diseased parts, stimulating cataplasms were applied, he was directed to take large doses of the sulphate of Quinine, was allowed the best diet, and a pint of London porter daily. The sloughs which were extensive, soon became detached, and in no long time he was discharged the hospital well.

REVIEWS.

Traité de Petite Chirurgie, par M. Bourgery, Docteur en Médicine. Paris, 1829.

This treatise is from the pen of a surgeon, little known on this side of the Atlantic, and it is more than probable his name is not very widely circulated on the other; still, like many of his cotemporaries, as yet strangers in the republic of medicine, he augurs well. He has written a work on a much neglected subject, and executed it with consummate ability. In the preface he says he was urged to undertake the work with a view of supplying a deficiency in surgical authorship, every where and by every one admitted.

It is a fact that at this day we have very many treatises on surgery, from the ablest masters in Britain, France, Italy, Germany, and America; but while they unfold the intricacies of the more difficult surgical diseases and operations, (which by the way occur in comparison with others but seldom, and are treated but by few surgeons,) are nearly silent on what our author calls "*Petite Chirurgie*," a branch so extensive as to demand a daily portion of the attention of every physician.

This work is divided into nine sections, which are headed, Dressings, Topical Medicaments, Bandages, Cutaneous Irritations and

Artificial Ulcers, Simple Operations, Wounds, Ulcers, Abscess, and Hemorrhages

That the reader may be enable to form an opinion for himself, we shall translate one article, viz:

Moxa.—By this name is designated a cylinder formed of some inflammable material placed upon the skin, and burnt until the latter is converted into an eschar. The Moxa produces the same effects as the actual cautery, and is employed in similar circumstances; but it has more power, the progressive energy of the fire making itself felt to a great depth in the neighbouring tissues. It follows therefore, that it cannot be so generally applied. The parts of the body to be avoided in its application, are those where the skin is very thin, as the eschar might penetrate too deeply—the osseous and tendinous projections, where exfoliation might follow, and where the heat might be too quickly transmitted to too great a depth through the medium of the conducting power of the bones; finally, the known tracts of the great vessels and nerves. The Moxa is the most efficacious means we possess for producing a powerful and long-continued revolution in the system. It is applied in cases of *Sciatic Neuralgia*, to the lower part of the lumbar division of the spine, because the sciatic nerves originate there; for paralysis, to each side of the spinous processes of the third and fourth vertebrae of the same region; for caries of the same part; upon articulations affected with white swellings, and upon the great trochanter in *Coxalgia;* but it is necessary in the other articulations to shun the points we have mentioned, and to form an eschar of but little depth. It may also be applied to the regions of the thorax, and right hypochondrium, for chronic affections of the lungs and liver.

The *Moxa* can be formed from various substances, as cotton, tow, charpie, the tomentum of the leaves of the *Artemisia Latifolia*, and the *Chinese Agaric.* Carded cotton is most commonly used. It is wrapped so as to form a cylinder equal in size to the moxa, which is commonly of an inch in diameter. It is then firmly wrapped with a strip of linen and covered with a strong solution of gum arabic, which, when it dries, gives it a sufficient solidity. The cylinder thus formed is cut into pieces of ten lines in length, which properly speaking, constitute the moxa. The manner of applying it is very simple. The patient being placed in a convenient situation, and extended on his bed so as to elevate the part to be operated upon, the two ends of the moxa are to be cut perfectly parallel, in order to insure an equal combustion, this being important in the formation of the eschar; one end is then to be ignited by the flame of a candle or a coal, and the other moistened with a little saliva, and applied to the skin on the selected part. To maintain the moxa in contact, a ring, fixed on a handle has been used, which is called *porte moxa.* This is a useless instrument, as any other will answer the same purpose. The *pinces à anneaux* are commonly used, and when opened to receive the *moxa*, are applied flatwise. The combustion should be as slow as possible, the gradual penetration of the heat, and its almost insensible augmentation, being one of the conditions necessary for the complete revulsive effect which the *moxa* is calculated to produce. To support the combustion, air is applied. The blast produced by expiration would suffice, but this is inconvenient for the person employed, as the irritation of the conjunctiva and larynx forces him frequently to cease the operation. The most simple plan is to hold the moxa with one hand in the pincers, and with the other to direct the blow pipe upon it, which will produce a regular and steady sufflation. To insure this, the tube should be at a fixed distance. Sometimes the combustion will be more intense in one part than another, but the foregoing directions will render it sufficiently uniform. At first the patient will only feel an agreeable warmth, which will soon be augmented to a heat causing intense pain. The skin around the moxa becomes inflamed and covered with serous vesicles, and slight oscillations and palpitations of the subjacent muscles are observed. When the combustion is nearly completed, the skin will become wrinkled, dry, and yellow, and concentric ridges are formed around the site of the moxa. At this time the sensation of burning is intolerable; oftentimes the patient is so much overcome by the pain as to render it necessary to support him. The principal effect being produced, the termination of the combustion must be hastened. At the moment it is completed, a slight explosion is heard, which depends on the rupture of the vesicles, and the remnants of the moxa are thrown off. The operation being finished, the pain vanishes as if by magic. The integuments without the site of the moxa are rough, dry, and horny. In the centre is an eschar of a deep brown colour, the intensity of which is regulated by the depth of the cauterization. Sometimes when the eschar is broken open, the whole of the skin, and the adipose and subcutaneous cellular tissues will be found interested. The dressing is made of some greasy substance spread upon linen, and the part is covered with a circular compress and a few turns of a roller or a body bandage, accordingly as the moxa has been applied to a limb, or to the trunk.

The subsequent inflammation soon developes itself, but it requires three or four weeks for the detachment of the eschar. This process is preceded and followed for some days by a profuse supuration. This is continued, and the wound is kept from healing by converting it into an artificial ulcer. The number of peas which are used, are in proportion to the extent of the cavity. There are usually four; they are applied, and the wound dressed every day, as we before mentioned when speaking of the cautery. Lest the peas separate, they should be connected by a thread, and retained in the wound by a piece of sticking plaster.

The *moxa*, which the Chinese use, consists of the substance obtained by rubbing in a mortar the leaves of the *Artemisia Latifolia.* M. Sarlandiere has tried this kind, which he applies in a peculiar manner; he puts on several at a time, at the distance of an inch from each other; he rubs and rolls it into a cylinder between his hands as large as a dove's egg, then one extremity of it being held with the first three fingers of the right hand, he applies the other to the palm of the left, and forms a cone, the density of which is increased by kneading it from side to side. After having thus prepared the number of cones which he wishes, he moistens with saliva the parts upon which they are to be applied, which causes them to adhere by their bases; he then ignites the summit, and the combustion continues of itself. His plan of applying the moxa is easy and convenient, but only causes a superficial cauterization. It would be well to employ it where we fear the action of the fire might penetrate too deeply; but where it is desirable to have a deep eschar and an abundant and long-continued supuration, the common *moxa* should be used. M. Percey employs a moxa made of the stalk of the great sun-flower, (*Helianthus Annuus*) soaked in a solution of nitre, and afterwards well dried. The same objection may be made to this as to that of M. Sarlandiere; it burns too quickly, and the cauterization is not sufficiently deep. The mild *moxa* of M. Regnault, formed of small cylinders of cotton, slighly pressed, about three or four lines in diameter, and six or eight in height, can act with but little energy, not more than that of a powerful blister. It appears that this writer has experienced good effects from it in Hydrocephalus, especially in cases of children. He has applied them several times as a revulsive upon the coronal, and sigittal sutures; and to diminish their activity, he interposes between the moxa and the skin, a disk of thick cloth. Finally, it has lately been proposed by some to burn upon the parts, a small piece of phosphorus, or a piece of camphor, instead of the moxa; but experience has shown the impropriety of both methods. The difficulty of regulating the combustion in some cases, produces too deep cauterization, while in others it is scarcely followed by a slight vesication.

We shall conclude this review by observing that of the different parts; that on simple operations is the most interesting, and that on cutaneous irritations the least important. This perhaps is more owing to the subject than the author. At all events, we are rather disposed to eulogise the performance, and have no hesitation in asserting that it ought to find a place in the library of every surgeon, as a useful appendix to the scholastic performances of Cooper, Sabatier, Boyer, G. Helius, Langenback, Assilini, Dorsey, and Gibson.

It is composed of 528 pages, octavo, therefore it is of an advantageous size for the market and would no doubt well repay a translator.

De Lingua Anatomica quædam et semeiotica. Auct. Robert Froreip in 4to cum 8 *tale, Bonnæ,* 1828.

The first part of this erudite treatise, *de evolutione linguæ*, is a fair specimen of the labour the author has bestowed on this subject. He has given minute and correct descriptions of this organ at different periods of fœtal life—from the fourth week upwards. However, the most interesting part of his treatise, is on the different appearances which the tongue presents when diseased. In treating of this part of his subject, he pursues the following order:

He describes the different colorations of the tongue, which are the following:

Rabedo, its normal colour. Then he attaches the following pathological states to the different diseases, of which they are symptoms.

1st, *Lingua pallida.* 2d, *Lingua rubra.* 3d, *Lingua prærubra.* In this state of the tongue, the author distinguishes two varieties: *Lingua prærubra coccinea*, and *Lingua prærubra fusca.* Besides these principal states of the tongue, he describes the following aspects as accidental:

1st, *Lingua atro-purpurea.* 2d, *Lingua cærulea.* 3d, *Lingua flava.* 4th, *Lingua fasca.* 5th, *Lingua livida, et nigra.*

The coatings of the tongue which modify its colour, are,

1st, *Inductus albus levis*, (villous tongue.)

2d, *Inductus lardosos*, variety, *inductus cretaceus.*

3d, *Inductus flavidus seu viridis*, (pilous tongue.)

4th, *Inductus niger.*

5th, *Inductus membranaceus.*

The alterations of the envelope of the tongue which he describes, are the following: 1st, *Glabrities.* 2d, *Lingua hirsuta.* 3d, *Aphtæ.* 4th, *Pustulæ.* 5th, *Anthrax* (glossanthrax.) 6th, *Petechiæ.* 7th, *Bullæ.* 8th, *Ulcera.* 9th, *Vulnera.*

The alterations in form are the following: 1st, *Tumor*, (all possible varieties.) 2d, *Lingua prælonga.* 3d, *Volumen Linguæ nimis imminutum.* Varieties; *cum rigore, Contracta et rigida, Parva atque imminuta.* 4th, *Obligua Lingua.*

Changes of temperature. *Calor adauctus*, *Lingua frigida* (convulsive asthma.)

The different degrees of humidity and dryness, are thus characterized. *Lingua sicca, aspera, fissa, adusta, et nigra.*

Finally, *Lingua humida et mollis, Lingua dura atque horrida*, two extremes of the consistence and humidity or dryness of the tongue.

We are sorry we have not more space, so as to enable us to go into the rationale offered by our author, on some of the conditions of the tongue now mentioned.

GLEANINGS FROM FOREIGN JOURNALS.

A Statement relative to the Birth of Males and Females, in connexion with the Age of the Parents. By Prof. Hofacher.

1st. In the marriages where the mother is more aged than the father, the number of boys is to that of girls : 90,6 : 100.

2dly. When the father and mother are of the same age, the number of boys to that of girls is 92 : 100.

3dly. If the father is from three to six years older than the mother, 103,4 boys : 100 girls.

4thly. If the father is from six to nine years older than the mother, 124,7 boys : 100 girls.

5thly. If the father is from nine to twelve years older than the mother, 145,7 boys : 100 girls.

6thy. If the father is eighteen years older than the mother, 200 boys : 100 girls.

7thly. Young men (from 24 to 36) produce with young women (from 16 to 26) 116 boys : 100 girls.

8thly. Young men with women more aged (from 36 to 46) produce 95,4 boys : 100 girls.

9thly. Men of middle age (from 36 to 45) with young women, produce 176,9 boys : 100 girls.

10thly. Men of middle age (from 36 to 45) with middle aged women, produce 114,3 boys : 100 girls.

11thly. Men of a middle age (from 36 to 48) produce with more aged women 109,2 boys 100 girls.

12th. Men more aged (from 48 to 60) with young women, have not afforded determinate results, because of the small number of cases offered for calculation.

13thly. Men more aged, with women of the middle age, have produced 190 boys to 100 girls.

14thly. Aged men with aged women (from 48 to 60) 164 boys to 100 girls.—*Gazette Medico-Chirurgicale d'Innsbruck.*

Many of these statements are at variance with those of M. Girou.

EDITOR.

Temporary Ligature of the Femoral Artery, by Dr. Canella.

—— Moele, æt. 34, of a delicate constitution and scrofulous aspect, who had repeated venereal complaints, experienced, after a violent exertion, in November, 1826, a difficulty in flexing the right knee. After a few weeks, he discovered a tumour in the popliteal space, possessing all the characters of an aneurism. As the tumour enlarged, Dr. Canella, in February, 1827, exposed the femoral artery in the upper third of the thigh; and as it appeared more voluminous, and less dense than natural, he secured it with a ligature tied on a small cylinder. On the fifth day, the ligature and cylinder were both removed, and in twenty-eight hours afterwards, a hemorrhage ensued, which ceased of itself. Four similar attacks subsequently ensued, and he died exhausted on the evening of the seventh day after the operation. It was proved by the post mortem examination, that the artery was ulcerated in the site which the ligature occupied, and the vessel in all its extent was twice as large as that of the opposite side.—(*Giornale di Chirurgia pratica.*)

When Dr. C. found that the vessel was diseased, he ought to have abandoned the operation on the femoral, and tied the external iliac artery.—EDITOR.

Amputation in Spreading Gangrene. By Dr. Grillo.

—— æt. 40, of an infirm constitution, in falling from a ladder, sustained a compound fracture of the right leg, immediately above the ankle joint. Gangrene set in, and was rapidly spreading, when he was carried to the Hospital of Pilgrims, at Naples. Forty-eight hours after the accident, Dr. Grillo removed the limb below the knee. The patient bore the operation well; he soon rallied; the wound suppurated kindly; and in a short period the stump cicatrized.

(*Giornale Medico Nap.*)

Baron Larry, the late Dr. Hennen, and Messrs. Hutchinson, Guthrie, Lawrence, and many other surgeons, have proved the efficacy of amputation in spreading mortification. See an essay on this subject, by the editor, in the London Lancet, 1827.

Spontaneous Salivation.

Dr. F. Petrunti attended a noblewoman, who laboured under different affections, and had taken by his advice, first, strychnine, then Dover's powder, hyosciamus, and ipecacuanha. In two months from the commencement of her illness, she became so excessively salivated, that for a week, she daily discharged nearly two pounds of saliva. Dr. Petrunti believed that this affection depended upon a morbid action of the nerves.—(*Osservatore Medico.*)

Renal Fistula cured by the Forces of Nature.

A woman, æt. 20, was wounded with a penetrating instrument in the right renal region. Hematuria followed the accident, which led her surgeon, Dr. Medi, to believe, that the kidney was injured. The ordinary practice was pursued with benefit; but on the twelfth day violent fever set in, and on the twenty-first, abundant suppuration was established, and large quantities of urine were discharged through the external wound. The suppuration gradually diminished, and the urine soon followed its natural route—the wound healed, and the poor woman was restored to health.—(*Giorn. Med. Napol.*)

Pressure substituted for Ligature of the Arteries in Amputations.

Dr. Sper has informed the Academy, that Mr. Segond, a naval surgeon, amputated the thigh not long ago, and restrained the hemorrhage by making pressure on the axis of the artery, as recommended by Kock. The patient on whom he operated, died a few days afterwards of an accidental complaint. On examination, he found that the vessel was free in all its extent, and contained the rudiments of fibrous coagula.—(*Bulletin des Sciences Medicales.*)

Cold Lotions in Rubeola.—When this disease was epidemic at Berlin, in the year 1823, Dr. Thaer conceived the idea of using cold lotions composed of vinegar and water, on all parts of the body. He treated sixty-eight out of one hundred and twenty cases in this way, and lost but one, while eleven of the remaining fifty-two perished. The disease assumed a very inflammatory character, and the manner in which the sick were surrounded by warm clothing and heated air, much increased this state.

In some of the cases treated by Dr. T. the lungs and brain were affected, and in all such cases, before he commenced the cold applications, he had leeches freely applied and cooling remedies exhibited. Moreover, he never neglected reducing the temperature of the sick chambers. By this plan of treatment the most desperate cases terminated favourably, and but four died. The fatal cases were far advanced when medical aid was first afforded, and they all had been much aggravated by warm apartments and bedding.

When the lotions were once commenced, all other means were discontinued. He began to use the applications when the temperature of the body exceeded 27½ R.; for it was then he observed that the patients became much agitated, and their respiration hurried. He varied the temperature of the lotions according to the heat of the body—the higher the animal heat, the lower did he make that of the lotions. He never employed them higher than 26° or lower than 1½° R.; the heat of the body in the former case being 29½° and in the latter 35° R. Finally, he never continued them for more than eight, or less than four minutes, at one application. He says, that the lotions should not be used if the infant is tranquil, or when it is perspiring.

We are assured, that children treated in this way, get well in eight days; the desquamation is prompt and abundant, and the convalescents may expose themselves to the free air during the desquamation, and before the catarrhal cough has altogether ceased. When the affection of the lungs is far advanced, the use of the lotion is followed by abundant expectoration.

He thinks, that if such patients could be kept in an atmosphere of 13° R. we might dispense with the cold lotions.

He follows this practice with great advantage in Scarlatina and Pertussis.—(*Hecker Litterar. Annalen der gesammten Heilkunde.*)

Dr. P. Malago on Ileus.

The author first endeavours to show, that fluid mercury when used for invaginations of the intestines, does not act but by virtue of its specific gravity, and that at best it is attended with great inconvenience, and too often, disappointment. He reports five cases in which he used it without success, and then comments largely on the operation of gastrotomy, which he considers as the most certain remedy against this dreadful disease. Finally, he relates the case of a man aged 46, who, for four years had an inguinal hernia. On the 19th March, 1825, symptoms of strangulation succeeded to a slight effort. The hernia was reduced; but the symptoms continued. On the 21st, Dr. M. observed, that the strangulation was in the right iliac fossa, where a tumour was observable. The ordinary remedies having failed, he proceeded on the 25th, to the following operation. The abdominal parieties being divided, he opened the hernial sack, which contained a pint of floculent serosity; the strangulation was then observed to be caused by the neck of the sack, to which the intestine adhered, and was only separated from it with difficulty. But two cutaneous arteries were tied, the wound was dressed, blood was taken from the arm, tamarind tea was administered and fomentations were applied. The patient did well until the fifth day, when an accidental hemorrhage took place and carried him off. On examination after death, the parts which had been operated on were found in the most favourable condition; consequently, the fatal result cannot detract from the advantages of the operation.—(*Giornale di Chirurgia pratica.*)

Praxagoras and Barbetti have said, that in cases of ilius, it is better to perform gastrotomy than allow the patient to perish. Hoffman and Plater demonstrate the possibility of this operation; Hévin on the contrary, has pointed out its dangers and uncertainty.

This author has very properly proved, that in the majority of cases, we are completely ignorant of the nature and seat of the strangulation; but at the same time, he admits the propriety of gastrotomy in cases where the seat of the stricture is known. (For further information on this subject, see a dissertation by Dr. Switzer, entitled *Adnotationes ad Colotomiam*, *Copenhag*. 1826.) But the case before us is very different from those discussed by the authors alluded to. Here, the internal strangulation was produced by the neck of a hernial sack, which was reduced after the incarceration commenced; such accidents, though uncommon, are still to be found on record; and are occasionally met with in practice. The symptoms which lead us to suppose that the sack has been reduced with the viscera, are the following: 1st. The hernia returns *en masse*, without a gurgling noise, 2dly. After the reduction, we perceive that the bursæ are empty. 3dly. The ring is larger than usual. 4thly. The finger introduced into the ring distinguishes a hard and round tumour which, when the patient coughs descends towards the ring. 5thly. The symptoms of strangulation continue.

The greater part of these signs are equivocal; thus, Henkel reduced a hernia, which returned with the *bruit de gargouillement*, and notwithstanding the strangulation continued, and the patient died. On examination, the intestine was found strangulated by the neck of the sack.

Viguerie, in an analogous case, introduced his finger into the ring, but did not perceive any tumour. The patient died, and on opening the body, he found, that the sack had been reduced with the intestine, and was lodged a little way behind the pubes.—*Acad. de Toulouse*, tom. iii.

Cruveilhier relates the case of a man who was admitted into the *Hotel de Dieu*, in March, 1814, in consequence of a hernia which had been strangulated for many days. The surgeon of the day reduced the hernia; but the symptoms continued to increase. Dupuytren examined the abdomen carefully, and perceived a hard, circumscribed, and painful tumour situated far back in the iliac region. However, he did not think that there were sufficient indications for the operation. The patient died, and on opening the body, Cruveilhier found that the hernial sack rested on the margin of the small pelvis, and contained a portion of omentum and intestine in a state of mortification. According to Jobert, Dupuytren has observed six cases of this kind in six hundred strangulated hernia.

If from the symptoms mentioned, we find that the sack has been returned, it becomes a very important point to determine what course to pursue; for a few hours delay may be attended with very bad consequences. Ledran, Lafaye, Arnaud, and Richter, as well as many other great surgeons, recommend, that the patient should strain and cough forcibly, so as to produce a reappearance of the hernia. (For a succinct and clear description, see Lafaye's edition of the *Op. de Dionis*. p. 324.)

Sabatier cites a beautiful example of an inguinal hernia, which was reduced by the taxis, with a gurgling sensation. A truss was then applied, but the symptoms of strangulation increased. He could easily introduce his finger into the ring, and distinguish a round tumour, which was pressed downwards when the patient coughed. From this, he thought the operation was the only means of saving his patient's life. He therefore desired him to strain and cough until the hernia reappeared, an event which luckily soon took place. Then he operated and divided the neck of the sack, which formed the stricture. His patient recovered.—*Med. Oper.* t. i. p. 78.

Sometimes, notwithstanding the patient's efforts, the hernia does not descend; then we are justified in dividing the ring until we arrive at the sack. Arnaud mentions the case of a man who had a hernia reduced; but the symptoms continued. On examination, he felt a resisting tumour above the ring. He proceeded to the operation, and in vain attempted to draw the sack, with its contents, downwards. He was therefore obliged to enlarge the incision by dilating the abdominal parieties from the ring upwards, for two or three inches. The operation was attended with perfect success. Viguerie reduced a strangulated hernia in a young man—the symptoms of strangulation continued; but he could not detect any tumour in the ring; consequently there was no positive index as to the cause of their persistance. Notwithstanding, he operated, and where the ring dilated upwards and outwards, to a considerable extent, he discovered the hernial sack, drew it downwards, and finished the operation in the ordinary manner. The result was attended with success. Jobert says, that in two of the cases which occurred to Dupuytren, the exertions of the patients were insufficient to protrude the hernia. In the first case, after he had divided the superincumbent parts, he seized the sack with a forceps, and drew it downwards. In the second, he was compelled to divide the inguinal canal, in all its extent, before he arrived at the sack, which he found lodged in the iliac fossa. The patient was perfectly recovered on the twenty-fifth day. In two of the other cases observed by Dupuytren, an inguinal hernia existed on each side; and one in each case was only strangulated. The symptoms indicated that there had been a hernia, which returned *en masse*, but it was impossible to learn more than that there was no tumour to be detected either internally or externally, as Dupuytren was certain that there was strangulation. He practised the operation in the first case on the side, where the hernia was apparent; and found no incarceration; he then cut on the opposite side, detected the tumour, and saved the patient. In the second case, he was lucky enough to avoid this mistake, and operated on the side, where the hernia was strangulated. This patient recovered also.

I believe I have now cited the principal facts that are recorded on this curious form of hernia. Dr. Malago's report is interesting:—1st, because it adds to the small number of cases recorded of a rare form of disease. 2dly. Because the sack was so enlarged by effused fluid, as to present its prolapse through the inguinal canal; and 3dly, because instead of following the steps of his predecessors, and dilating the inguinal canal, he cut through the abdominal parieties above and without it. I do not mean to assert, but that he may have had sufficient grounds to warrant this proceeding; still it is more than probable, that had his patient recovered, he would have laboured under a ventral hernia. Therefore, I would not recommend such a proceeding, unless dilitation of the inguinal canal appeared insufficient.—Editor.

Extra uterine Pregnancy.

Dr. F. W. Williams relates the case of a woman who had a fœtus lodged without the womb for fifteen years, during which time she bore four living children. The history of the case may be summed up as follows:—In April, 1811, Mrs. —— a young married woman, became pregnant, and in June, 1812, she was attacked with labour pains; the mouth of the uterus did not dilate, and the pains subsided. In the following July, her menses returned, and she soon afterwards became pregnant, and had a natural *accouchement*. She afterwards became pregnant three times, and felt no other inconvenience than that caused by the weight of her belly. Three of the four children lived and were perfectly healthy. After her last pregnancy, which took place in the year 1824, she ceased to menstruate, and in a short time she became affected with severe pains in the region of the bladder and anus, and discharged from the latter, fœtid and purulent matter mixed with clots of blood and pieces of bone. In a few days after, during a severe vesical tenesmus, a similar evacuation took place from the urethra. These discharges continued, and reduced her to the lowest ebb. Dr. Williams prescribed soothing and tonic medicines, frictions of the oil of hyosciamus on the belly, anodyne injections, and a generous diet. A remarkable improvement soon took place—her appetite and strength returned, the hectic fever subsided, and in a short time the discharges ceased. Dr. Williams has in his possession the following fœtal bones discharged by Mrs. ——:

1st, The two halves of the frontal bone of which the orbitary portion is wanting.

2d, The fragments of the pareital bones.

3d, The occipital portion of the occipital bone, without a vestige of any other part.

4th, The squamous portion of the temporal bone with the zygomatic process.

5th, The superior maxillary bone, of which the orbitar process is deficient.

6th, The malar bone.

7th, The palate bones.

8th, Nine true ribs, of which five were adherent to the last dorsal vertebra.

9th, The last lumbar vertebra.

10th, The left ilium, united by a ligamentous subtance to this last vertebra.

11th, The scapulæ.

12th, The ossa humeri.

13th, One radius.

14th, The two femora.

15th, One tibia.

16th, Some small bones, which appeared to belong partly to the carpus and metacarpus, and partly to the tarsus and metatarsus.

The other fragments of bone which Madame ——— had passed, were lost. (*Hufeland's journ. der practischen Heinkandé, Mars,* 1829.)

Rupture of the Hepatic Duct, by M. Wolf.

A woman of sixty years of age, the mother of seven living children, with a strong constitution, and the appearance of good health, a number of years ago was attacked with jaundice, since which she has had frequent attacks of cholic, with nausea and vomiting. The paroxysms were not very violent, and their duration varied much; sometimes they disappeared in a few hours; at others they continued, with intermissions, for many days. On the 1st of July, 1827, I was sent for in great haste. On my arrival, I found her labouring under a violent spasm of the stomach, which ceased in a few minutes. I learned from her that she had been for several days afflicted with cholic, for which she had taken the infusion of camomile and Hoffman's drops. During my visit, she had several violent paroxysms. Pulse nearly natural; temperature of the skin not increased; tongue clean; stools regular, and the urine limpid. In the intervals of pain, her belly was not at all tender. I prescribed the liquid laudanum of Sydenham, in doses of ten to fifteen drops, which gave her relief. During the night she had several violent attacks, for which were administered several doses of opium, which were followed by a sound sleep. About 9 o'clock in the morning, I was called in great haste. The patient had been awakened by violent pains. I found her belly tense, blown up, and very tender; her feet and hands of an icy coldness, her face covered with a cold sweat, and her pulse frequent and small. She complained of a continual thirst, and instantly vomited every thing she took. I suspected some rupture in the abdomen, and my prognostic was very unfavourable. The case of Admiral Wassenaur, observed by Borhaave, and reported by Zimmermann, came into my recollection. I had thirty leeches applied to the lower part of the belly. The pain continued, and the uneasiness increased every instant; nevertheless, the patient was in the full possession of her faculties. Continual but ineffectual desires to go to stool tormented her very much. The leeches procured her no relief. Blisters were applied, and analeptiques with opium administered without success. An injection of barley-water produced, about mid-day, a copious fecal evacuation, and the patient passed a small quantity of turbid urine. About one o'clock, the pulse could not be felt; the coldness of the extremities increased; the thirst and vomiting continued, the lower belly was more and more distended, and the respiration accelerated and uniform. Her consciousness remained perfect to the last moment—the muscular strength was surprising, and the voice was strong to the last breath. She died about four in the morning, twenty-four hours after the first violent spasms.

Upon opening the body, about three pounds of blood, mixed with bile, were found in the abdomen. Traces of inflammation were seen on the intestines. The little omentum was several inches in diameter, and of a dark colour. Upon a careful examination of this part, the hepatic duct was found torn across, with its torn ends floating in a mass of coagulated blood. The liver was healthy, and the gall bladder contained a large quantity of bile, and eight rough calculi weighing a pound, and of a greenish brown colour, the smallest of which was engaged in the orifice of the cystic canal, without entirely closing the tube or preventing the flow of the bile. It is probable that the hepatic duct had been inflamed several years before, when she laboured under the jaundice, and that the extravasation had taken place at the same time. It may also be, that the bliary calculi had their origin from this malady. The attacks of cholic depended on the calculi. That on the 1st July was purely spasmodic, and undoubtedly depended upon the irritation produced by the calculi lodged in the cystic canal. It was during the second attack, on the morning of the 2d, that the hepatic canal gave way, in consequence of violent spasmodic contraction.

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TELANGIECTASIS.

THE disease designated by the British authors *anastomosing aneurism:* by the French *tumuers variequeuses, sanguines, fungus hematodes, erectile, &c.:* and by the Germans *angicetasis, telangiactasis, &c.*—has been studied carefully since the beginning of the present century, by J. Bell, Hodgson, Freer, Dalrymple, Travers, Lawrence, Brodie, Wardrop, Syme, and M'Lachlan, in Britain; by Pellatan, Boyer, Richerand, Dupuytren, Cruveilhier, in France; and by Meekel Ghelius, Walter, and Rouste, in Germany. Yet we may assert with confidence, that more correct information is required on the intimate structure and treatment of the different forms of this malady; therefore it is not unreasonable to suppose that the following cases, facts, and observations, may prove useful to the afflicted, and interesting to the surgical reader.

CASE I.—*January* 6th, 1829. Susan Burke, aged three months, has on the inside of her left thigh, a purple coloured congenital tumor, about the size of a shilling, elevated two lines, irregular on its surface, compressible, and subject to erection.

Jan. 8th. This morning I transfixed its base in four different points, with a cataract needle, heated to whiteness.

App'r Cataplasma Commune p. d.
Hb't Ol: Recin: ʒ ij.

Jan. 10th. Tumor of a much brighter colour, surrounded by an erysipelatous blush, and gangrenous in the immediate vicinity of the punctures.

Pergat.

Jan. 15th. Tumor diminished in size, and of a dark brown colour—redness and tumefaction have subsided—sloughs detached—some purulent discharge from the punctured points.

Jan. 20th. Tumor contracted to near half its original size, of a yellow brown colour, and considerably indurated—purulent discharge has ceased.

Jan. 30th. Tumor has disappeared—the site, formerly occupied by the diseased mass, is dense, fixed, and of a dirty yellow colour.

Case II.—*November* 2d, 1827. William Henderson, aged seven months, has immediately below the axilla on the right side, a vermilion colored tumor, of an irregular figure, larger than a shilling, raised about three lines, and attended with constant throbbing, which is increased, and accompanied with considerable enlargement when he cries. His mother informs me, that it was not more than one-third its present size, and devoid of pulsation, at birth.

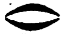
Nov. 5th. I, this day, have perforated the base of the tumor, in five different places, with a white-hot needle.

App'r Catapl: Com. p. d.

R. Ol: Recini, ʒ j.

Nov. 10th. Tumor scarcely half its size, of a yellow red colour, hard, and without pulsation—surrounding parts slightly inflamed—some discharge from the punctured points.

Nov. 20th. Tumor has subsided.

Case III.—The infant, Mary Mullens, whose case is related in another part of this pathological exercise, had a vermilion coloured tumor about this size  on the right upper palpebra. I treated it as the above cases, and with equal success.

Case IV.—*November* 27th. 1830. Miss M. aged five months, from whose under lip I removed an erectile tumour, on the 16th of September, has, in the skin of the right side, midway between the axilla and the ilium, a similar growth, about the size of a cent piece, elevated four lines, irregular on its surface, and of a dark blue color. On examination, I can detect a slight thrill in every part of the diseased mass, and by pressure, I can nearly reduce it to a level with the surrounding skin. At birth, there was a purple stain in the site of the tumor, as large as a sixpence, but not elevated in the slightest degree. When I removed the tumor from her lip in September, the stain on her side was incapable of erection, and on a level with the skin. Her mother informs me that it began to enlarge about a month since.

Nov. 28th. With the assistance of Dr. Stevenson, I transfixed the base of the tumor in several directions with a needle heated to whiteness.

App'r Catapl: Com: p. d.
℞. Ol: Recini, ʒ j.

December 1st. Tumor much diminished in size, and of a dark red color,—punctured points occupied by sloughs—surrounding parts highly inflamed.

Pergat.

Dec. 3d. Sloughs detached,—punctured points suppurating,—surrounding inflammation has nearly subsided—tumor much diminished in size, indurated, and of a brown red color.

Dec. 10th. Not a remnant of the tumor is to be seen. In the punctured points, there are a few fungous granulations.

℞. Nitratis Argenti gr. v.
Aq: Distillatæ ℥ ij. Fiat lotio p. d. app'r.

Dec. 15th. Well.

Cases cured by the application of Ligatures.

Case V.—I.—*June* 2d, 1826. Marting Young, æt. nine years, has a tumor about the size of a sparrow's egg, situated on the inside of the commissure of the lips, on the right side, of a vermilion color, shining, elastic, rough, globular, subject to erection, ulcerated in two or three places, and attended with a distinct pulsatory motion. When a few days old, his mother discovered a small stain in the situation now occupied by the tumor, which remained unchanged until the period of teething, when it enlarged to the size of a split pea. One year ago, he laboured under scarlet fever; after which, the tumor began to enlarge. Eight months since, he pinched it between his teeth, and immediately it threw out florid blood in large quantities; since which, the hemorrhage has returned five times.

June 5th. This morning, I passed a curved needle, armed with a double ligature, through the sound parts, beneath the centre of the tumor, then, cut away the needle, and secured each half of the diseased mass in a separate ligature.

℞. Pulv: Rhei gr. x.
Aq: Cinnam: ℥ ss.
Tinct: Sennæ Comp: ʒ Fiat haustus statim sumendus.

June 7th. Tumour mortified—surrounding parts inflamed.

June 11th. Tumor has sloughed off—a clean and healthy granular bed is exposed—surrounding iuflammation much reduced.

℞. Sulplatis Zinci semi-drachmam.
Aquæ Puræ uncias octo, solve, ut fiat lotio, p. d. app'r

June 14th. Ulcer nearly healed.

June 20th. Well.

Case VI.—II.—*December* 11th, 1826. Miss R. æt. sixteen years, has an erectile tumor, in which the arteries are predominant, of a globular figure, and about the size of a grape. It developed itself at the age of fourteen, in a congenital stain, above the right jugum temporale.

Dec. 13th. I have included the diseased mass in two firmly applied ligatures, carried through its base by a suture needle.

App'r Catpl: Com: p. d.

R. Massæ Pliulæ Hydrargyri gr. v. h. s.

R. Sulph: Mag: ʒ ij.
Infus: Gentian:
Aq: Cinnam: āā ʒ j. Fm. capiat coch: ij. mag: 2 da. qq: hora c. m. s.

Dec. 19th. Tumor has sloughed off—healthy suppuration—surrounding parts slightly inflamed.

App'r. Lotio Zinci p. d.

Dec. 30th. Ulcer healed—cicatrix healthy.

Case VII.—III.—*March* 7th, 1827. Jane Conner, æt. seven months, is afflicted with an erectile growth on the tip of her chin, about the size of a cherry, partly ulcerated and fungated, attended with pulsation, and subject to hemorrhage. This disease developed itself two months ago, in a congenital stain.

March 12th. I have closely secured the base of the tumour in two ligatures, which were previously conducted through its base by a suture needle.

App'r Catap: Com: p. d.

R. Ol: Recini ʒ j.

March 17th. Tumor has been cast off—a suppurating surface is exposed.

R. Oxymur: Hydrargyri gr. viij.
Aq: Calcis ℥ viij. Fiat lotio p. d. app'r.

March 25th. Ulcer healed.

Case VIII.—IV.—*May* 9th, 1829. Catharine Hart, æt. three months, has a tumor on the superior lip, rather larger than a split pea, livid, mammillated, erectile, and partly fungated and ulcerated on its centre. Her mother says, that at birth, it was not larger than the head of a pin, and that during the last fortnight it has bled repeatedly.

May 10th. I have included the base of this erectile mass in two tightly applied ligatures.

Hb't Ol: Recin: ʒ ij.

May 13th. Considerable inflammation.
May 15th. Tumor detached.
May 20th. Well.

Case IX.—V.—*September* 6th, 1827. James Right, aged one year and nine months, was born with a livid erectile tumor on the left temple; then it was about the size of a barley-corn; now its circumference is rather larger than a shilling, and it is elevated between three and four lines from the surface.

Sept. 10th. This morning I passed two ligatures through the base of the tumor, and firmly tied in, each half, with the corresponding ligatures.

App'r Catapl: Com: p. d.
R. Ol: Recin: j. ℥

Sept. 17th. Erectile mass has sloughed off.
Sept. 26th. Ulcer healed.

Cases cured by Ligature of main vessel feeding the Tumour.

Case X.— I.—In July 1829, Luke Whitecomb, æt 19, by occupation a porter, of large stature and full habit, consulted me in consequence of a tumor situated on the inside of the left cheek, extending over the commissure of the lips to near the median line, about an inch and a half in length, and three quarters in breadth, elevated considerably above the surrounding parts, irregular on its surface, of a livid colour, compressible, and attended with obscure pulsation. He informed me that it had existed from birth, but had given him no uneasiness until the beginning of the summer; then it began to enlarge, to be attended with pain, a sensation of fulness, and a constant vibratory motion, which was daily becoming more distinct.

I mentioned to him, that I thought it might be removed by ligatures; but if they failed to produce the desired effect, it would be necessary to have recourse to the knife. He was averse to any operation, and consequently did not again visit me until January; then, on examination, I found that the tumor had increased considerably: superiorly, it extended to the reflection of the mucous membrane, from the first molar tooth backwards: inferiorly to nearly the same distance, engaging all the intermediate portion of the cheek: posteriorly, into the pharynx as far as the finger could be introduced; and anteriorly, to the median line. Its periphery was indented; its anterior part elevated about three quarters of an inch; its central was less prominent, and its posterior still less: its surface was irregularly salient, and its colour livid, especially in the site where the tumour first developed itself. It pulsated every where, but particularly behind. By pressure, its anterior portion could be readily diminished in volume; but its posterior very slowly underwent a similar change, to a very small extent; for it would appear that this part was principally composed of dilated arterial twigs, pursuing winding courses, and crossing each other in every possible direction. The external labial and transverse arteries of the corresponding side of the face, were considerably enlarged and tortuous. The bulk of the tumour rendered mastication difficult; it was attended with constant pain, which was dull and confined to the tumour when he remained quiet, but became lancinating under bodily exertion or mental emotion; then, it would become erected anteriorly and pulsate with violence posteriorly, producing pain over the corresponding side of the forehead and face, attended with profuse lachrymation and a burning sensation of the cheek.

I informed him that the operation proposed in July, was now impracticable, and that ligature of the common or external carotid was the only feasible means left. He acceded to my proposition, and on the 15th January, with the aid of Professor Francis, and Drs. James, Anderson, and Craft, I tied the common carotid.*

It would be useless to give the daily reports made on this case until the 13th February, when the ligature came away—then, the tumor was not larger than when I first examined it; yet it had a slight vibratory motion. On the 27th, the vibratory motion had ceased, and on the 11th March, the tumor had degenerated into a layer of spongy substance, producing a slight fulness of the part.

On the 10th July I examined this man, and found that he continued well; a few indurated granules, about the size of millet seeds, could be felt in the site of the tumour.

Case XI.—II.—*April* 7th, 1830. Mary Mullens, aged six weeks and four days, has a tumour of a vermilion colour, mammillated, compressible, shining, erectile, ulcerated in two points, attended with pulsation, elevated about half an inch above the surrounding skin, engaging all the left side of the perineum, the corresponding labium, part of the right, superior, and left lateral portions of the verge of the anus and rectum, and in all probability the entire tract of the urethra and vagina; for both these cylindars, particularly the vagina, are actually stuffed with the morbid mass. This diseased growth has existed from birth; but was not, then, much elevated, nor did it extend so far on the perineum. Her mother says it has bled five times so as to threaten death; the last attack occurred two days ago, during which she had a slight convulsion. She is now rather pallid; but sucks well.

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* More of this operation at another time.

April 9th. The hemorrhage returned last night, but was checked by pressure. I have related the real nature of the case to the parents, and explained in the most forcible terms, the dangers and difficulties of securing the common iliac artery, and the very great probability of the fatal issue of the operation; at the same time, my inability to offer any other method of relief. After some deliberation, they requested me to perform the operation: I advised them to reconsider the matter, and to let me know the result.

April 10th. The parents decided on the performance of the operation; therefore, with the assistance of Dr. Leo Wolfe, and in the presence of Professors Macnevin and Francis, and several other medical friends, I proceeded to and tied the right common iliac artery, in the following manner:

The little patient being placed and secured by assistants on a table of the common height, about two feet and a half in length and one and a half in breadth, covered with a thickly folded blanket, and immediately under a high window, which notwithstanding the cloudy state of the day, transmitted as much light as could be desired, I placed myself on a high chair at her feet, and having figured in my mind a line cut into three parts, extending from the umbilicus to the anterior superior spinous process of the ilium, I commenced an incision at the point separating the external from the middle third, and carried it downwards in a slightly curved direction until I arrived at a point corresponding to the internal abdominal ring.* By a few sections, the external oblique muscle was exposed, and two vessels divided which required ligatures. The three abdominal muscles were then successively elevated, and cut through, on a fine silver director. During these sections, three arteries sprang, and were secured in the order of their occurrence. I now proceeded to push off the peritoneum from the abdominal walls towards the iliac fossa, by gently breaking through the intervening mucous tissue.† From the heaving of the child, the delicacy of the peritoneum, and the smallness of the wound, I found it exceedingly difficult to accomplish this step of the operation. I therefore dilated the wound superiorly for half an inch, when another vessel bled smartly, but was soon taken up and tied. By gentle and repeated efforts I now succeeded in bearing off the peritoneum until I arrived at the artery. The lips of the wound were then held asunder by narrow curved spatulas, so that those who were near me had an opportunity of seeing the artery and the vein lying *in situ*, on the last lumbar vertebra, and the ureter pursuing its course into the pelvis. I then proceeded to insinuate a silver aneurism needle with a blunt point between the artery and vein, which being effected, I withdrew one end of the ligature with a blunt-hook, and then by means of the *serre-nœud's* secured the vesssel. One end of the ligature was cut short and the other permitted to hang out of the wound. On examination the tumor was found much collapsed, and free from pulsation. The parts being cleansed of blood, I flexed the thighs on the trunk, and so secured them, by properly adjusted rollers. The wound was then dressed with adhesive straps, compresses, &c.

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* The reader will do well to recollect the form and direction of the spine and pelvis; the volume and situation of the abdominal viscera, and the anatomy of the rings in the infant under three months.

† I follow the example of Meckel, many other German anatomists, and some by some French physiologists in the use of this term. I am not now going to enter into an analysis of their opinions, or of those that have been urged against them. I shall only say, that the term mucous is more applicable than cellular to this tissue in the infant.

The operation lasted nearly three quarters of an hour,—the infant cried much; but was partly quieted by sucking the finger of an assistant, along which milk and water was continually poured—her strength failed but little, for while I applied the dressings, she held the finger so firmly in the mouth, that by pulling it, her head would be elevated from the table. Not more than half an ounce of blood was lost, and her lips were as high coloured after, as before the operation.

When handed to her mother, she took the breast with great avidity, and soon fell into a sound and placid sleep.

As I unluckily forgot my thermometer, I could not measure the temperature of the limb; but to the touch it felt rather colder than the opposite one.

None, but those who witnessed the operation, can comprehend the difficulties I encountered. The vascularity of the parts; the extreme delicacy of the peritoneum; the perpetual motion of the abdomen forcing down the viscera; and the smallness of the wound were difficulties of no ordinary kind.

9 o'clock, P. M.—She is now tranquil. Her mother says that she did not awake for four hours after the operation; then, she took the breast greedily, and soon again fell asleep. Temperature of right limb in the popliteal space, 92°—that of left, 84.° F.

R. Tinct: Opii: gutt's v. s. o. s.

Left leg to be wrapped in new flannel.

11th. Her mother gave her the opium at 11 o'clock last night, in consequence of commencing restlessness, after which she slept well—has taken the breast three times—bowels opened this morning—temperature of right limb, 92°—that of left, 86.° F.

R. Tinct: Opii: gutt's v. s. o: s.

12th. Has taken the opium as on the preceding night—slept well—bowels open—sucks with avidity—temparature of the right limb, 92°—that of the left, 90.° F.

Flannel to be removed from the limb.

R. Tinct: Opii: gutt's v. s. o. s.

13th. Did not require the opium: sucks well—bowels open—temperature of both limbs the same (92°)—dressings changed, with the exception of the adhesive straps—tumor of a more livid colour, devoid of pulsation, but a species of vibratory thrill is perceptible in its most prominent part.

15th. Has been exceedingly well since last report—tumor still further diminished, and free from all vibratory motion—adhesive straps removed, wound united at the angles, and suppurating kindly in the centre—four of the ligatures which were applied to divided vessels have been detached.

17th. Tumor subsiding rapidly, wound discharging good matter—the two other ligatures applied to divided vessels have been cast off—general health perfectly good.

19th. Has gone on well until last evening, when she became restless—wound looks well—slight tumefaction and redness of left knee.

App'r Hirudines, iv. p. d.

Hb't Ol: Recin: ʒj.

20th. Feverish, refuses the breast, bowels only moved once by the Castor Oil—tumefaction and redness of knee continue.

Rep'r Hirudines, et Ol: Recin:

21st. Erysipelatous redness of the lower part of left thigh—fever continues—bowels open.

App'r Fot: Tepid: Anodyn: p. d.

℞. Ol: Recin: ʒ*ss.*

22d. Less fever—erysipelas has extended as far as the wound, discharge scanty and tenaceous, granulations soft and pale—bowels open—tumefaction of knee continues.

Rep'r Hirudines et Fot:

℞. Sulph: Quininæ gr. i. *ss.*
Mucilag: Gum: Arab:
Aquæ Bullientis āā ℥ *ss.*
Tinct: Opii: gutt's iij. Fiat Enema ter in die inj'r

23d. Ligature has come away—tumor nearly gone—less fever—takes the breast better—discharge from the wound more abundant and less tenaceous—erysipilatous inflammation has extended to the upper part of right thigh, and almost disappeared on the left—bowels open—tumefaction of knee diminished.

Rep'r Enemata.

25th. Erysipelas gone—some swelling of the left knee remains.

Om'r Enemata.

27th. Wound nearly healed—tumor has all but disappeared—swelling of knee increased—general health not good. The air of the apartment is foul.

App'r Hirudines iv. genu.

Rep'r Fot: Tepid: Anodyn: ut autea.

30th. Wound cicatriced, save half an inch of its centre,—tumor has completely subsided; the parts which it occupied are shriveled, slightly indurated and of a dirty brown colour—tumefaction of the knee rather increased—no change for the better in her general health.

As the air of the house in which this poor family lives is very bad, I have requested the mother to change her place of abode; but as she feels indisposed to acquiesce in this wish, I almost fear that pecuniary inability forbids her. However I have directed the infant to be taken out daily.

Rep'r Hirudines et Fot: Tepid: genu.

Hb't Emenata Sulph: Quininæ ut autea.

May 2d. General health much improved—tumor of knee rather increased, attended with some obscure fluctuation—wound perfectly healed.

Rep'r Enemata.

App'r Catapl: p. d.

4th. Tumor of knee much increased on the inside, immediately below the line of the articulation—general health restored. Tumor punctured and one ounce of bloody fluid discharged; the probe when introduced, passed into a bony cavity apparently below the knee joint.

Rep'r Cataplasmata et Enemata.

Limb supported on a pasteboard splint.

It would be useless to give the further reports made on the progress of this case, save that she became gradually weaker from the profuse discharge furnished by the abscess, and that two days before her death, on the 17th of the month, she was afresh attacked with erysipelas, which engaged the entire of the limb and the lower part of the belly.

Sectio Cadaveris.

A cyst of organized fibrum containing pus, separated about the four internal fifths of the epiphysis from the diaphysis of the left tibia.

Two bullæ ezisted on the tract of the cicatrix, a few on the lower part of the belly, and many on the internal part of the thigh.

The right iliac artery was perfectly obliterated from the site of the ligature to the bifrucation of the aorta.

A very slight adhesion existed between the outer part of sigmoid flexure of the colon, and the parietal portion of the peritoneum.

The subject of the case just related was cured by the operation, and from this she recovered; but sunk in consequence of the disease in the tibia. What produced this disease? May not the vascular communications between the epiphysis and diaphysis have been injured, by the efforts necessary to keep her steady during the performance of the operation? Did not both attacks of erysipelas depend on the tibial affection? The first attack of erysipelas set in acutely, but soon became low; the second was low from the first. As mentioned in the course of this case, the air of the sick apartment was bad—it was a cellar room, and in addition to its unfavourable locality, the weather during the greater part of the time was exceedingly damp.

Case XII.—*Sept.* 23d. 1830. Miss D. æt. 19 has in the front of her right leg, immediately below the knee, a spongy tumor, two inches in length and one in breadth, situated immediately beneath the skin, with a fistulous opening on its surface, from which thin matter exudes. She informs me, that it first made its appearance in the year 1821.

I have removed the diseased mass. It lay between the skin and the fascia, and consisted of a mass of dilated capillary veins, woven together in every direction and supported by hypertrophic cellular tissue.

Case XIII.—*June* 27th, 1830. Miss A. æt. 11 years, has a vermilion pulsating tumour, about half the size of a cherry, situated on the anterior and right lateral portion of the alveolar process of the superior maxilla. It is about three weeks since she first observed this tumor.

30th. This morning I removed the diseased growth, and found that a false tooth jutted into its base.

Case XIV.—*November* 14th, 1826. Mr. A., a publican æt. 56, but hale for his age, has a fungus of a bright red colour, about the size of a very large orange, attended with distinct pulsation, growing from the anterior and middle part of the left tibia. Of it, he gives the following history. About thirty years ago, he had a compound fracture of the left leg, in the place now affected; since which it has been shorter than the opposite limb. In July, while building a tent at a fair, one of the poles in falling, struck him violently on the leg, but did not break the skin. From this period, the part struck became more and more painful, and in three weeks he was unable to walk; then, the bone was apparently enlarged. In six weeks the bony tumour became soft and pulsating. In two months the skin gave way; there was considerable hemorrhage, and a fungus appeared, which has daily enlarged and repeatedly bled to the extent of half a pint or more.

Staff-Surgeon Melin has seen this patient with me, and we have decided on amputation, as the most feasible means of saving his life.

22d. This forenoon with the assistance of Messrs. Burton and Rogers, Surgeons to the forces, I removed the limb.

Examination of the member.

The vessels being filled with fine injection, the dissection was made. Then, it was ascertained that the fungus grew from the medullary canal of the tibia, and consisted of arteries and veins, but principally arteries, intersecting each other in every possible direction, and supported by an abundance of cellular tissue.

Case XV.—*September* 24th, 1827. Mrs. Keogh, a pensioner's wife, æt. 23 years, informs me, that shortly after she was born, her mother observed that the internal parts of the genital organs were of a blue colour, as far as could be observed; but without obvious tumefaction. She menstruated at the age of fifteen, when the parts became swollen; but in a fortnight they resumed their wonted state. She did not again menstruate until three weeks after her marriage, which took place when sixteen years and four months old. At this period, the parts became swollen, excoriated, and inflamed. When this irritation subsided, she proved pregnant, but aborted at the end of the second month, and this mishap recurred four times nearly at the same period. From her marriage the generative parts gradually enlarged; and for the last two years, she has lost from the labia and vagina, at different periods, amazing quantities of blood, by which she has been reduced to the very lowest ebb, and rendered dropsical.

Last night, I was called by her husband to check an alarming hemorrhage, when I obtained the above facts, and now, I shall describe the state of disease as observed both then and this morning.

All the external parts of generation were greatly swollen, the labia being six or eight times their natural size, of a dark blue color, compressible and tuberculated. One of the most prominent tubercles of the right labium had an ulcerated aperture on its centre, which had given rise to the hemorrhage. When I diminished the size of the left labium by pressure, I was enabled to introduce my finger towards the vagina; but could not enter it, even for a small extent, without considerable pressure, which caused so much pain as to prevent any protracted attempts.

10 o'clock, P. M. Hemorrhage returned; but suspended by pressure.

12 o'clock, P. M. Died exhausted.

25th. I have examined the body:—her husband would not allow me to use injection.

The disease extended itself in the substance of the vagina to the os tincæ superiorly, and to within half an inch of it posteriorly. The urethra and neck of the bladder were likewise engaged in the disease. When air was pushed into the labia it permeated the morbid mass, giving it an immense increase of volume and rendering its surface irregular. When the mass was cut into, it appeared to consist of dilated veins and numerous cells, some as large as the bowl of a thimble, many of them being filled with coagulated blood. On close examination these cells appeared evidently continuous with the veins.

CASE 16.—*Jan.* 12th, 1830. Mrs. ——— called on me this morning, with her child, aged thirteen days. It has a tumor on the inferior edge of the scapula, nearly as large as its head, with a very extensive base. This anormal production is erectile, compressible, and attended with a distinct thrill in every part. The skin is rather tense, and verging towards a livid hue. Her mother says that it was not larger than a lemon at birth.

I refused to try any means of relief; because I knew of none, in the least likely to do any good. I however requested the mother to let me see the little sufferer in a few days. She answered me readily in the affirmative, but never after returned. Therefore I am inclined to believe that the infant sunk under the ravages of this dire disease; particularly so, as nature had nearly surrendered her forces when I was consulted.

SECOND PART.

In the beginning of the present century, Dupuytren applied the term erectile to the tissue of the penis, clitoris, nipple of the breast, &c. because of its capability of erection under the influence of stimuli. There have been endless disputes about the structure of this tissue. Haller believed it was cellular—that arteries poured blood into the cells, and veins absorbed it.* This opinion was embraced by his cotemporaries, and is even adopted by some of the anatomists of the present day. Since his time, however, Hunter, in England, Mascagni Moreschi, Panizza, and Farnese, in Italy, Tiedemann, Hempel, and Weber, in Germany, and Ribes, Dupuytren, Cuvier, and Beclard, in France, have carefully investigated its structure, and one and all of them have arrived nearly at the conclusion, so succinctly and beautifully expressed by the immortal Vesaluis, "*Corpora hæc (cavernosa) enata ad cum fere modum, ac si ex innumeris arteriarum venarumque fasciculis quàm tenuissimis, simulque proxime implicatis, retia quædam efformarentur.*"† Cuvier made his researches on the penis of the elephant, Tiedemann on that of the horse, and Mascagni on man. The last author says, "In the year 1787, when I published my work on the lymphatic vessels, I mentioned that the parts called cavernous bodies in the penis‡ and clitoris, were nothing more than a mass of arteries and veins, without interruption of canal; and that between them a dilitation, or little cell was interposed In 1795, from the result of many fine injections, I began to doubt the existence of this dilitation or cell, and about the end of the year 1805, I obtained satisfactory evidence on this subject; for I observed and publicly demonstrated, that veins of a calibre or diameter, more or less extended, together with arteries less in number and size, collected in the form of a plexus, to constitute the external and internal membrane of the urethral canal, the glans penis, and all that substance which surrounds the canal of the urethra, and terminates in the perineum near the anus." Again, "In a word, I have demonstrated, and in such a manner as will not admit of doubt, by injection, and by preserving too, the pieces demonstrated, viz. the glans, the body I have called spongiosum urethræ, and also the spongy mass which surrounds the orifice of the vagina, that the supposed cells do not exist, but that the arteries, being reflected, give origin to the veins, and form with them plexuses, which when variously accumulated, constitute the glans, and all that vascular body which surrounds the canal of the urethra and mouth of the vagina.*"

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* Elementa Physiologiæ, lib. xxvii. Sect. 1—3.

† De Corporis Humani Fabrica, lib. v. cap. xiv. Ingrassias and Malphighi gave similar descriptions of these bodies, and Haller was undoubtedly aware of their opinions.

‡ Haller used the term corpus cavernosum urethræ.—*Elem. lib.* xxvii. sec. 1, 33.

The disease of which we have cited examples, appears to be a morbid developement of this tissue. "The tumor," (says J. Bell,) "is a congeries of active vessels; and the cellular tissue, through which these vessels are expanded, resembles the cellular parts of the penis, the gills of a turkey cock, or the substances of the placenta, spleen, or womb."—"The tumor is composed of small and active arteries, absorbing veins, and intermediate cells. The irritated and incessant action of the arteries fills the cells with blood: from these cells it is re-absorbed by the veins: the extremities of the veins themselves perhaps dilate into this cellular form. There seems to be a perpetual circulation of blood; for there is incessant pulsation. The tumor is permanent, but its occasional variation of bulk is singular. It swells like the penis in erection, or the gills of a turkey cock in a passion. It is puffed up by exercise, drinking, or emotions of the mind. It is filled and distended with blood upon any occasion which quickens the circulation, as by venery, menstruation, the pleasures of the table, heated rooms, or the warmth of the bed."†

This is a faithful description of the phenomena of this disease, but the account given of its internal structure is incorrect; for he advocates the cellular structure of the tumor. What I have said of the anormal condition of this tissue is applicable to it, when accidentally developed. It is of the same nature as the corpus spongiosum uruthræ, corpora cavernosa penis, &c.—that is, it consists of numerous fibrous prolongations, which support an inextricable net-work of arteries and veins. In the majority of cases, the veins are predominant. Beclard thought that the veins were always in greater quantity than the arteries; for when treating of the morbid developement of this tissue, he says: "The vessels are much enlarged, particularly the veins. It can be easily injected from the neighbouring veins, which are for the most part varicose, but with much difficulty from the arteries."[*] Dupuytren supposes that the arteries are predominant.[†] Cruveilhier is of the same opinion. He says, "But if we inject the arteries with caution, we see a vascular, inextricable net-work, without any species of cell. The injection, pushed by the veins, does not arrive at the tumor, but that forced through the arteries, fills them, and returns by the veins."[‡]

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* Prodromo della Grande anatomia. Del Paolo Mascagni, Vol. I. p. 187-8-9, Milano, MDCCCXXI.

† Principles of Surg, page 457.

It is curious how such men should differ. I have examined twenty-three specimens of this morbid structure, in every possible manner, and have ascertained that the proportion of arteries and veins continually vary. In a few cases, the disease seemed to be confined altogether to the veins; but in the majority, both sets of vessels were enlarged, and in the greater number of these the veins were most affected. I am also convinced, that when the morbid mass has existed for a length of time, and the cellular fabric becomes well developed, the extremities of the veins dilate, and form cells, which give the surface of the tumor a purple and mammillated appearance; and that they burst and bleed profusely, in some cases even *per saltem*, because the extremity of an enlarged artery opens into, or, more correctly speaking, is continuous with, the ruptured sack. Therefore, I conceive the following quotation from J. Bell, as nearly a redeeming clause in his description of this disease: "The extremities of the veins themselves perhaps dilate into this cellular form." The principal method which I have pursued in my investigations, consisted in filling the tumor with fine wax injection, and then corroding the mass in diluted marine acid,—according to the predominance of the arteries and veins, so the tumor was best filled from them. I have also examined eighteen nævi materni, and have satisfied myself of the following facts. 1st. That when the stain is not elevated above the surrounding parts, the portion of the dermis affected, becomes softened and disappears to a certain extent, and its place is supplied by a *rete vasculare*, in which, for the most part, the veins are predominant. 2d. That when the stain is elevated, the vessels are not only enlarged, but there is a hypertrophic condition of the cellular tissue, which in a filamentous manner extends itself into the body of the tumor, and gives it much of its size. 3d. That as the stain is elevated above the skin, though the veins, in the greater number of cases, still continue predominant, the arteries bear a greater proportion to them. And 4th. That in proportion to the enlargement of the stain, so does it become mammillated, because of the dilitation of the extremities of the veins.

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[*] Elemens d' Anatomie Generale, p. 175. Paris, 1828.

[†] Breschets Hodgson, Vol. II. p. 300.

[‡] Anatomie Pathologique, Vol. II. p. 132-3. Paris, 1816.

THIRD PART.

Of the erectile tumors which I have related in the first part of this essay, the following were congenital, viz: those of Susan Burke, William Henderson, James Right, Luke Whitecomb, Mary Mullins, Mrs. Keogh, and Mrs. ——'s child. Some developed themselves in congenital stains, as those of Miss M., Martin Young, Miss R., Jane Connor, and Cath. Hart. Finally, others were engendered after birth, in parts otherwise healthy, to wit: those of Miss D., Miss A., and Mr. A. In the cases of Wm. Henderson, Martin Young, Miss R., Jane Connor, Luke Whitecomb, Mary Mullins, Miss A., and Mr. A., the diseased mass was principally arterial; whereas in the cases of Susan Burke, Miss M., Cath. Hart, James Right, and Mrs. ——'s child, the veins predominated. The disease in Miss D., and Mrs. Keogh, was altogether confined to the veins. In the former it was accidental, in the latter it may be said to have been congenital, or at least to have developed itself in a congenital stain.

Of the three accidental cases, the arteries were predominant—in those of Miss A. and Mr. A.

In the cases of Wm. Henderson, Martin Young, Miss R., Jane Conner, and Luke Whitecomb, the veins were predominant at first, and afterwards the arteries; while in those of Mary Mullins and Mr. A., the arteries were in excess from the commencement. In the first series of patients it was congenital, and also in Mary Mullins; but in Mr. A. it was accidental.

In some of the congenital cases the disease remained stationary for months, in others for years. The former class includes the cases of Miss M., Martin Young and Jane Connor: the latter, those of Luke Whitecombe, Mrs. K., and Miss R. Of the cases which remained stationary for months; the disease was arterial in Martin Young and Jane Connor, and venous in Miss M.; but in both the cases of Martin Young and Jane Connor, the tumor was venous before it became arterial. Of the cases which remained stationary for years: the veins were predominant at first, and the arteries afterwards, in those of Luke Whitecomb and Miss R., and venous from first to last in Mrs. Keogh.

The disease in the cases of Susan Burke, William Henderson, Miss M., Miss R,. Jane Connor, and James Right, was situated in, or at least commenced in the skin. In the cases of Martin Young, and Cath. Hart, the disease commenced in the substance of the lips; and in the case of Cath. Hart it never exceeded its limits. In the case of Miss A., it was confined to the mucous membrane of the mouth. In those of Mrs. Keogh and Mary Mullins, it engaged the organs of generation. In Mr. A. it was confined to the bone, and in Miss D. and Mrs. ———'s child, it was located in the cellular tissue.

In addition to these situations, I have seen an erectile tumor, as large as a lemon, situated in the left psoas muscle. It adhered to the colon, and had burst into its cavity. I have also observed a similar tumor, but not larger than a hickory nut, in the thin edge of the liver.*

With respect to the causes which gave rise to the disease, in the cases quoted, we can only extend our inquiries to the accidental cases, viz. those of Miss D., Miss A., and Mr. A. In Miss D. the disease was produced by a tight garter; in Miss A. by the irritation of a new tooth; and in Mr. A. by an injury sustained.†

As to the causes which produced a sudden developement of the disease, in the cases where it appeared to be stationary—we see that in Martin Young it was increased by teething; and after this irritation subsided, it remained quiet for years, when, in consequence of the scarlet fever, it enlarged rapidly, and was still farther increased by external injury. In Miss R. the constitutional irritation produced by menstruation, caused its sudden developement; and in the case of Luke Whitecomb, the same change was induced, in all probability, by high living, weighty exertion, and warm weather. Finally, in the cases of Jane Connor and Miss M., no cause could be assigned.

FOURTH PART.

Nothing can be more cruel than to cut helpless and delicate infants wantonly; they can badly bear the loss of blood, and but too often, rash and ignorant operators are taught a lesson of forbearance, by losing their tender victims on the table. Still there are cases, even in the very young, where procrastination would be fatal, and the surgeon is called on to remove a disease which is daily engaging important parts, or from rupture and hemorrhage is threatening the patient's existence.

In many instances, the tumor can be removed by strangulating its base, with ligatures, as the cases of Lawrence, Brodie, Hodgson, and those related in this paper fully prove; but sometimes from the extent or irregularity of the tumor's base, we are not able to encircle it; and under such circumstances, a cure may often be effected by transfixing its base with the white hot needle, a method of treatment so successful in the cases of Susan Burke, William Henderson, Mary Mullins, and Miss M. The consequence of this operation is a high degree of inflammation, which is followed by disorganization and absorption of the tumor; but if the punctures be large and numerous, portions of the erectile mass may slough. These two methods of operating, are alike applicable to the arterial and venous disease.

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* Dupuytren has found an erectile mass in the kidney, and Cruveilhier in the brain. Anatomie Pathologique, tom. II. p. 133, 83.

† A case occurred to Dupuytren, and another to J. Bell, in which the disease had been produced by a tight hat; and most authors have related cases where the morbid growth evidently depended on irritation either from external or internal causes.

When the tumor is large and involves important parts, so as to forbid the application of the means just mentioned, or excision, and is threatening the patient's existence, ligature of the principal artery feeding the tumor is the feasible means of relief, no matter whether the disease be arterial or venous. In the cases of Mullins and Whitecomb, as well as in those detailed by Mr. Travers of London, Dalrimple of Norwich, and many other surgeons, the arterial form of the disease was successfully treated in this way; but, it must not be concealed, that in similar cases, and in the hands of equally eminent surgeons, this remedial expedient has completely failed. Mr. Wardrop tied the carotid artery on a child six weeks old, for a large and ulcerated cutaneous nœvus, of a venous character, situated on the left cheek. The immediate consequence of the operation was a diminution of the tumor; but on the thirteenth day, the child died, exhausted from the ulceration previously established in the morbid mass. Mr. Wardrop supposes, that by cutting off the supply of arterial blood, the tumor will collapse, the blood remaining in its cells coagulate, and consequently, if ulcerated, there will be less chance of hemorrhage; moreover, he believes, that it will tend to render the removal of the tumor practicable—a step heretofore fraught with difficulties and dangers.* He has since repeated this operation successfully on an infant, affected with a similar disease of the face.†

If the tumor engages much of a limb, as in the case of Mr. A., amputation becomes necessary.

In the case of Miss D., I excised the tumor, because there was no fear of hemorrhage; it was sub-cutaneous; there was an object in saving integuments; and I had not then, nor have I since, tried the white-hot needle in such cases.

Nothing could be done for Mrs. Keogh. I considered well whether it would be justifiable to tie one of the iliac arteries, on the principle which Mr. Wardrop has advocated; but I concluded, that as the disease was far advanced, and her health greatly deteriorated, if operation would be justifiable in such a case, the period of its performance had then gone by.

FIFTH PART.

My reading has not furnished me with a case like that of Miss D.—that is, one where an erectile tissue, purely venous, was developed from pressure.

There is no disease like that of Mrs. Keogh's on record, save the following, by Lamoriere:

"A Spanish pilgrim, about 70 years of age, in 1716, when on his way to Rome, was admitted into the *Hotel Saint Eloy*, in consequence of a pectoral fluxion. He had a tumor which occupied all the right superior extremity, from the tips of the fingers to the chest; bounded by the circumference of the scapula and the great pectoral muscle. This extremity was blackish, bordering in some parts on lividity. It was everywhere much enlarged and unequal, but without hardness. We did not perceive any pulsation, and when we pressed it with the finger, the resistance communicated was like that which is felt when the hand is pressed on the spleen of a calf, or sheep, distended by inflation.

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* Medico Chir. Trans. Vol. IX. p. 206—214.

† London Lancet, Vol. 12, p. 267.

When we pricked the patient with a pin, in any part corresponding to the scapula, arm, fore-arm, or hand, to the depth of half a line, the blood darted to a distance of about two feet, and continued to flow during one or two minutes, even without the aid of a ligature.

"When the patient raised his arm to his head, two considerable tumors formed, one on the scapula, and the other on the great pectoral muscle, to which the blood descended, beneath the skin, from the fingers, hand, fore-arm, and arm; and in proportion as these tumors formed, the hand, fore-arm and arm, lost about two-thirds of their volume. When, on the contrary, he lowered the arm, a tumor formed all over his hand, to which the blood descended from the scapula, great pectoral muscle, arm, and fore-arm; these parts, at the same time, losing their volume.

"This tumor was as old as the patient who carried it. His parents had informed him that it existed from birth; besides, the phenomena of the disease tended to confirm the same.

"This poor Castilian had not only this but also three small round tumors, on the helex, one on the middle of the forehead, and the two others on the top of each parietal bone. They were flat, and had the same peculiarities as those of the superior extremity; being soft, and of a plumb colour. When we pricked them with a pin, the blood sprung out to a less extent, and during a shorter period, than from the puncture we made in the arm. When we caused him to incline his head forwards, the three tumors augmented, and each of them acquired the size of a turkey's egg; when, on the contrary, he elevated his head, the tumors appeared to diminish; they flattened themselves and almost subsided: if, nevertheless, we placed the finger on them, we felt a mollescence in the flesh, and a breaking up of the bones on which they were situated. The age, and the fatigue which this man suffered during a long voyage, added to his pectoral disease, caused his death.

"We commenced the post mortum examination, by fixing pipes in different parts of the muscles of the arm; then, when we inflated violently, from the side of the fore-arm, hand, or fingers, all these parts became considerably swollen; and when we ceased to blow, the swelling rapidly subsided. We opened the skin to see the substance of the muscles, and found dilated vesicles everywhere intermingled with their filaments, communicating with each other by considerable pores. The substance of the muscles resembled that of the placenta; but much more, that of the spleen of a calf or a sheep, distended with air. The bones (of the diseased extremity) were not more than half their natural volume; their figure was irregular, and their substance spongy.

"We next examined the cranium, and found that the tumors of the skin and pericranium, were of the same structure as the muscles of the superior extremity. We elevated these tumors, and found that the portions of the cranium on which they rested, were much broken up; one of these portions was so thin, that when the pericranium was elevated, it could not resist the application of the scalpel, though it was applied with much management. Nevertheless, the rest of the cranium was of considerable thickness. We compared it with the thickest skull we could find; we trephined both, towards the junction of the saggittal and lambdoid sutures, and the piece taken from the cranium, on which the varicose tumors were situated, was much more thick than that of the other."*

The cases of Luke Whitecomb, and Mary Mullins, treated by ligature, differed only in one respect. The arteries of the diseased mass in both, were in an aneurismal state; but in Whitecomb's case, the enlargement extended beyond the tumor. The only cases similar to his on record are, by Boyer, Pellatan, Wardrop, and McLaghlin.

Boyer's case is as follows: "Catharine Micart was born with two stains, of the colour of wine lees; one on the left ear, and the other on the parietal region of the same side. After a lapse of some years, they became considerably swollen; but it was only when she was eleven years old, that a large and irregular tumor began to develope itself, in which small openings spontaneously formed, and gave exit to vermilion blood. This young girl was then at the *Hospital de la Salpetriere.* We cut this fungous tissue extensively; considerable hemorrhage took place; and when the blood which distended it was discharged, we dressed it, and in a month afterwards, the wound was cicatriced.

Nevertheless, the tumor made rapid progress. In September, 1805, the patient, who was then eighteen years old, entered the Hotel Dieu, in consequence of hemorrhage, produced some days before, by a puncture inflicted on the superior part of the ear.

The tumor extended itself all over the temporal region, which had a varicose appearance; we saw and felt the pulsations of the arteries, which were prodigiously dilated. The ear was red, thick, and agitated in all its extent, by pulsations, syncronous with those at the wrist. On the summit of the helix we observed a cicatrix, which burst from the slightest bruise, and gave rise to a brisk and protracted hemorrhage, only to be checked by pressure, and as we feared, it would frequently return and detach the dressings.

Pressure on the temporal artery before the ear, caused the pulsation of the tumor to cease; therefore, we hoped to reap advantages from protracted compression of the temporal artery; but the bandage caused such excruciating pain, that we were obliged to discontinue it. M. Pellatan conceived the project of tying this artery, and the occipital. He made an incision through the integuments along the anterior part of the concha, in a line corresponding to the pulsation of the artery. When he came to pass the needle beneath the artery, he perceived that it was impossible to effect it below the origin of the anterior auditory branch. He therefore plunged the needle above the condyle of the lower jaw; but the temporal was so large at this place, that the needle traversed it; nevertheless, he tied the ligature. After having observed, by touch, the situation of the occipital, he forced, without a preliminary incision, the needle through the integuments, at the posterior part of the sterno-mastoid muscle; but the needle had scarcely penetrated, when red blood jetted from both the punctures it had effected. After dividing the integuments transversely, he tied the ligature; the pulsation ceased. Pressure was made above the condyle, and though painful, was endured until it produced a gangrenous eschar, which rendered it necessary to dress the wound more frequently than heretofore. At each dressing there was a slight hemorrhage, and the pulsations, though less strong, were renewed. During this treatment she was seized with a gastric affection and erysipelas of the face. Two abscesses formed, one in the centre of the tumor, and the other on the sternum; many hemorrhages took place from the occipital artery; the forces became extinguished, and the patient died fourteen days after the operation.

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* Mem. de l'Academie des Sciences de Montpelier, tom. 1.

Opening of the Body.

The integuments of the cranium and of the ear of the left side, did not present any structural alteration; we only remarked a cicatrix at the summit of the parietal promontory, behind, the opening of a sub-cutaneous abscess, and on the helix, a small opening plugged by a clot of blood.

Under the skin from the zigomatic arch and occipital projection, all along to the summit of the head, there existed a thick and dense couch of cellular tissue, in which we found pus here and there infiltrated, or collected into small cavities. The cellular structure of the ear was very red, and formed by an interlacing of a great number of dilated veins and arteries.

All the arteries comprised in the tumor beneath the cellular tissue of which we have spoken, were dilated, tortuous, crumpled, here very large, there very small, full of clotted blood, or of a whitish and thick humor. The temporal artery, from its origin even to the middle of the temple, was simply dilated; it was open for nearly an inch, where the ligature traversed it; the portion of the tube not embraced by the ligature, formed a fibrous cord, at the bottom of the wound, and higher up, this artery with its branches was crumpled, flexuous, large and red.

The occipital artery, divided very low into two branches, both of which were dilated; one of them only had been tied; above, these two branches were knotty, large, and tortuous, and assisted in the formation of the tumor.[*]

The following case is related by Pellatan.—"A man about 24 or 26 years old, has an an erectile tumor attended with arterial pulsations, situated on the left temporal region, extending across the vertex to the right side of the head. The disease commenced in the trunk of the external carotid, near the ear. This artery is here dilated to three times its natural size. The commencement of the neighbouring branches are in a similar condition; however, except for a short distance it is impossible to distinguish the divisions of this artery, as there is nothing perceptible but a large cellular or fungous mass, affected throughout with arterial pulsation. By compressing the artery at the point where it begins to dilate, the pulsation of the tumor ceases immediately."[†]

This man would no submit to any operation, and left the hospital, so that the termination of the case was not observed by Pelletan.

The above cases, though highly interesting, are still less so than those of Wardrop and M'Laghlin, now to be related.

——, "aged 22, of a full and powerful habit of body. In the left side of his head, covering a portion of the frontal, parietal, and temporal bones, is a very large pulsating tumor, whose surface is extremely soft and very irregular, forming many lobules, of various size and position, and resembling in appearance those large varicose tumors which are occasionally found in the course of the saphena vein of the thigh. The pulsation is distinct throughout every part of the tumor, which can easily be emptied of its contents by pressure. The trunk of the temporal artery, and its branches, are enormously enlarged, and pulsate with remarkable vigour. The latter terminate suddenly, in the swelling which occupies the usual position of the middle temporal artery. The posterior aural artery, and the occipital, as well as a branch from the temporal vessels of the opposite sides, are wonderfully enlarged, and communicate abruptly with the disease. All these arteries may be seen with the eye. On emptying the tumor of its contents, which fills the moment pressure is withdrawn, the cranium below is found to have undergone (no doubt from pressure) a remarkable process of absorption, particularly at those points where the tumor has attained the greatest bulk. It must, at many places, have become exceeding thin. The integuments covering the most prominent portion of the swelling have become very much attenuated, and it is evident that ulceration must soon be the consequence of the distention. Over the

[*] Traité des Maladies Chirurgicales, tom. 1, p. 401—2. Bruxelles, 1828.

[†] Clinique Chirurgicale.

situation of the trunk of the temporal artery, is a long cicatrix, the result of an operation of the ligature of that vessel. The patient complains of frequent most distressing pains and sensations in his head; in other respects he enjoys excellent health. The complaint commenced slowly twelve years ago, after the receipt of a blow, and it has increased gradually till it has assumed its present alarming size. Two months ago a ligature was applied to the temporal artery, but this did not in any way check its progress. The day following the patient's admittance into the hospital, Mr. Wardrop tied the common carotid, immediately above the crossing of the omo hy. mus. The moment the ligature was applied, the pulsation in the tumor ceased, but the swelling did not collapse as might have been expected. The patient experienced no unusual symptoms in his head. In the evening he found himself comfortable: a slight thrill was perceptible at the upper portion of the tumor, which had become harder and more solid, but in other parts it had ceased. The large dilated arterial vessels in the neighbourhood were collapsed; the right carotid pulsated with great force. The patient has been bled, and up to the present time is doing well."

It would be useless to follow the reports afterwards made on this man, save that after a few untoward symptoms he recovered from the operation, left the hospital, and died some months afterwards of another complaint, at the Westminster hospital, where a post-mortem examination was made, and the diseased parts prepared by Mr. H. Mayo, surgeon to that hospital. Through the kindness of Mr. Mayo, I had an opportunity of examining the specimen, and observed that the arteries were considerably enlarged.*

In M'Laghlin's case, "soft, puffy, pulsating, and somewhat elastic swellings, of a varicose appearance, were found to occupy the course of the temporal posterial, auris, and occipital arteries, and their principal branches, each branch terminating by a tortuous extremity. These swellings could be made partly to disappear by pressure. They pulsated synchronously with the heart, throughout their whole extent. Pressure on the carotid artery stopped their pulsations, and also by pressing on each of the trunks leading to them. They were not painful, and only disturbed the patient by violent throbbings, which deprived him for nights of his sleep. The integuments covering them were not of a natural colour, except in the prominent parts, where they had a slightly bluish red tinge. The largest of them about the size of a split lemon, commenced in the front of the ear and over the zygoma, and sent processes towards the forehead, the vertex, and back of the head. The disease commenced ten years ago, after arteriotomy, which was followed by a small aneurism, for the cure of which the artery was first cut, and afterwards tied lower down. The tumor re-appeared in a short time, but produced little uneasiness for than five years.

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* For further information on this case, see Lancet, vol. 12, p. 267, and 798—9. Also, a continuation of the case in vol. 13.

On assuming its present character, pressure was tried, but could not be endured for any length of time. On applying to the writer of the case, the patient was anxious to have the carotid tied, having been told that the operation was the only means by which he could be cured. This, he was informed by the writer of the paper, could be done after other means had been tried; and he accordingly tied the artery, as it emerged from the parotid gland. On dividing the fascia-like substance, covering the artery, it shot forth in the form of a loop, larger than a goose-quill. It was thiner and more diaphanous than a vein, and thrilled violently at each pulsation. A ligature was applied round this loop, which partially stopped the pulsation in the anterior and central portions of the tumor, which now felt flaccid and doughy. The state of the artery at this point, indicated the necessity of tying the common carotid, which was performed the next day, and completely stopped the pulsations in the various tumors, though they were diminished little in size. The patient died in four days, when the following appearances presented themselves on dissection: the wound, which had adhered by first intention, had partially opened by putrefaction, by heat of the weather. The carotid par vagum, and jugular vein, appeared as if never disturbed; there was no pus formed round the ligature. On slitting up the artery, and cutting through the ligature at the same time, small but soft clots of blood were found above and below the ligature, and the artery remained puckered by the recent deposition of lymph. Its inner coats were divided, as if with a knife; the outer was dense, strong, and entire. Below the ligature, the inner coat was of a vermilion red colour; even that of the thoracic aorta, bore equal marks of inflammation; but the vessel, at its bifurcation, was perfectly healthy in its appearance. The carotid in the neck was of its usual size and thickness; but in examining its branches on the head, they were found to have degenerated into dilated tubes of extreme thinness and transparency, which, yielding to the impulse of the blood, had become elongated, contorted, and attenuated convolutions on themselves, so as to form the tumors in this singular disease. These tumors felt like placenta, and to the eye the large part over the ear looked like earthworms coiled together."*

As far as my reading extends, I do not know of any case like that of Mr. A. Those related by Scarpa, Pearson, Pott, Breschet, J. Bell, and perhaps that of Lallemend too, are different.

Many of my views and researches on this species of aneurism, are to be found in the London Lancet, and at a future period I purpose to continue this subject, as some further facts which I have ascertained with respect to its pathological anatomy, and its semiology, are not yet sufficiently extensive to allow me to draw definite conclusions.

EDITOR.

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* Glasgow Medical Journal No. 1, February 1, 1828.—And Lancet, vol. 12, p. 733—4.

ROBERT WELLS, M. D., OF NEW-ORLEANS, ON THE EARLY STAGES OF DYSENTERY.

All medical writers appear to coincide in the opinion that dysentery is an inflammation of the mucous membrane of the intestines. If we are to decide upon a disease from the appearances presented in a post mortem examination, this opinion is unquestionably correct, for we find the mucous coat of the intestines in a dissenteric subject, bearing evident marks of inflammation and its consequences. But though such be the condition of the canal in the last stage of the disease, it by no means follows, that it is in the same situation in its commencement. It is not until those changes have taken place which have eventuated in the death of the patient, that we are permitted to examine the diseased organs. Before we can decide upon the nature of any disease, it is surely requisite that we become acquainted with the primary change that has taken place, from the healthy to the diseased state. In deciding, therefore, upon the nature of dysentery, it is necessary to ascertain the alterations that have taken place in the lining membrane of the canal, and for obvious reasons, morbid anatomy here affords us no light. As far as we can judge, inflammation of every tissue is invariably preceded by irritation. In serous membranes, whose sensibility in a healthy state is obscure, irritation may occur without producing any sensible effect: and the existence of disease first becomes manifest, by the symptoms of inflammation. On this account, diseases of these membranes may be considered as inflammations, though properly speaking, even here the inflammation is the consequence of the primary lesion, which becomes subsequently the disease itself. But in the disease of mucous membranes, the case is widely different. We have here the most unequivocal signs of irritation continuing for a considerable length of time, in some cases for days, without the slightest symptoms of inflammation. We have neither derangement of the circulation, nor pain on pressure. We may have tormina and tenesmus, with mucous and bloody discharges, without either fever, or pain upon pressure. The griping pains of this stage of the disease, afford no proofs of the presence of inflammation; for we find them in diarrhœa, or after the exhibition of purgative medicines. The attending fever, inflammation, ulceration, thickening, softening, &c., of the membrane, can be considered as nothing more than the direct and immediate consequences of the primary irritation. I do not deny that dysentery may be preceded by fever and by derangement of the biliary organs, and that it may be complicated with and modified by these various affections, but I consider them merely as attendant diseases, forming no part of the disease itself; for it is not denied that dysentery may exist without fever, consequently fever is not one of its essentials. I consider the disease as a unit, residing exclusively in the mucous membrane of the intestinal canal, and can conceive of its existence in no other organ. When I see one writer class it with the febres, and another assert that the liver is the seat and soul of the disease, they are to me utterly unintelligible. It is not my intention to write a dissertation on dysentery.—My principal object in this paper is to offer a few remarks upon the treatment of its early stages, I believe the disease in its early stage to be essentially an irritation, and not an inflammation; and the mode of treatment I pursue, differs widely from that of those, who believe it to be *ab initio* an inflammatory affection. And first with respect to the lancet: I have never seen a case in this country where I considered it necessary to use it, neither do I think it a favourite practice with any gentleman in this section of Louisiania. I should consider it as worse than useless, and in a great majority of cases, productive of fatal consequences. Topical bleedings may become necessary, though they very rarely are so. In fact, I seldom meet with a disease of any description, more especially among the black population, which requires blood letting. It is an undoubted fact, that the inhabitants of hot climates, (at least of this climate) be they natives or emigrants, will not bear the loss of blood, especially during the hot season of the year. The black population are more sensible of this loss than the whites. A negro will sink under a bleeding, which a white man in a northern country would scarcely be conscious of. The planters are so fully aware of this fact, that it is with the greatest difficulty you can get their permission to bleed a negro. I have never in this country seen a case of fever or dysentery, that called for this remedial measure. Purgatives are the means most strongly recommended by almost every writer who has treated of this disease. To commence our attack with purgatives—to continue them, till we have thoroughly evacuated the canal, are the general orders. Nothing can be done till this great object is obtained. Now what indications have we for the exhibition of purgative medicines? If the disease be, (as it assuredly is at its commencement,) an irritation of the mucous membrane, what benefit can we expect from adding to that irritation, by the employment of purgatives? If the mucous coat be inflamed and ulcerated, they must be more injurious than if it be simply irritated. In this disease, our object should be to allay, not to increase the irritation; and in my opinion, purgatives, properly so called, form no part of the treatment. It might appear necessary to offer some apology for differing in opinion with so many writers of talent and experience, who have recommended the use of purgative medicines; but discrepancies of opinion are unfortunately so common among members of the profession, that it would appear mere affectation. Every man has a right to form and publish his own opinions. Mine are the results of experience, and are entitled to no claim of originality. Notwithstanding my hostility to purgatives in this disease, I believe them advantageous in its commencement, to evacuate the canal, provided we can do so without increasing the irritation already existing. This may be done more effectually with castor oil than with any other medicine: and it is with it, in ounce doses, combined with 60 or 70 gtts. of the tincture of opium, that I commonly begin the treatment. In some cases, I give a few grains of calomel with opium, and follow it in a few hours, with the oil. In nine out of ten cases this is the first and the last purgative that the patient takes. After the exhibition of this medicine, I usually order 20 gr. of Dover's powder, every three hours, or sixty drops of the tincture of opium, four, five, or six times a day, till the pain and tenesmus are relieved. I have no hesitation in increasing the opium, if the above quantities do not produce the desired effect. I have never seen any evil arise from the use of it. I could cite many cases in proof of the efficacy of the above simple mode of treatment. I have seen many negroes come into the hospital with every symptom of a severe attack of dysentery; pain in the head, nausea, pain in the abdomen, tormina, and tenesmus, with mucous and bloody evacuations, and in some cases, discharges of pure blood, whom I have treated in this manner, and in whom every bad symptom has vanished in less than twenty-four hours; and these negroes have returned to the field on the third day. In case the disease should not come under treatment sufficiently early to yield to the above simple means, and inflammation with fever should have supervened, the remedial measures will require some modifications. Probably the patient will not bear so much opium.—Still the pulv. Doveris may be given with decided advantage, to which a few grains of calomel may be added, though I confess myself sceptical as to the good effects of this latter medicine, unless we have evidence of the liver being affected. In this stage of the disease, I should object more strongly to the use of purgatives, than in the first stage, or that of irritation. We have now the canal irritated, inflamed, and perhaps ulcerated. To apply an irritant to a membrane in this condition, is contrary to every principle in medicine. It may be said that purgatives should be given to empty the canal of its morbid and irritating contents; but it is doubtful if these contents be irritating. We know of no membrane that is irritated by its own secretions, either in health or in disease. The fact is, when the disease has gone on to inflammation, ulceration, &c., very little can be done by medicine. To keep the bowels in a state of rest, and to support the strength of the patient, are the grand indications. We may use the warm bath, fomentations, an occasional bland enemata, warm clothing, an occasional blister, and the pulv. Doveris, with a few grains of calomel; though, as I before remarked, I have my doubts as to the efficacy of this latter medicine, as far as the intestines are concerned. I am aware, there are those who consider the liver as essentially concerned in the disease, but they are not borne out in this opinion by the appearances presented in post mortem examinations. Numerous dissections of dysenteric subjects have shewn the liver in a perfect state of integrity. It is well known that the liver may, and does, become affected; but this is only a complication of a disease of the liver with one of the intestines. When this complication is ascertained, then calomel may be of service. In the stage of inflammation, and in that of irritation, I place more reliance upon opium than upon any thing else; and the form in which I prefer exhibiting it, is that of Dover's powder. I have hitherto said nothing of emetics of ipecacuana, because I rarely employ them, as I have never experienced any decided benefit from them. Emetics of antimony I consider decidedly pernicious. Astringent remedies also I believe injurious in the early stages of the disease. We know that irritations and inflammations of mucous membranes terminate favourably in an increase of their secretions, as we see in the case of common catarrh. To check or arrest these secretions would therefore be to arrest those actions of the part, which have a natural tendency to terminate in health, and consequently to aggravate the disease. Astringents can have no effect in allaying the irritation or in preventing or lessening the inflammation, but the very reverse. The only reason for prescribing them must be to arrest the purging:—but this is not the disease, only one of its natural consequences; and we can never overcome a disease by attacking its symptoms. As soon as we can allay the irritation and inflammation of the canal, we need give ourselves no trouble concerning the host of attending symptoms. With respect to the scruple doses of calomel, recommended in this disease by Johnson, I can say nothing from experience. I have occasionally given ten grains, combined with opium, at the very onset, and followed it in a few hours with a mild cathartic; but I have never tried his plan of giving it in successive doses of twenty grains. As far as I can discover, the treatment of the complaint with mercury has not been successful here. In fact, I am acquainted with some gentlemen of experience who have abandoned the use of it entirely in this disease, and who consider it as decidedly injurious. It would however be presumptuous in me to condemn it untried; especially as it comes recommended by the high authority of Johnson. Still I look upon the medicine as an active cathartic. I have given it in large doses, in the epidemic fever of New-Orleans, and have always seen it prove powerfully purgative, and as such cannot avoid considering it as improper in any disease attended with irritation and active inflammation of the mucous membrane of the intestinal canal. In chronic dysentery, it is undoubtedly a good practice to bring the system gradually under its influence. But I am here speaking of the treatment of the disease in its early stages.

It will be seen at once that the mode of treatment I pursue, differs but little, with the exception of blood letting, from that recommended by Abercrombie, in his late work on diseases of the stomach, &c., nor from that of Cheyne, who also is decidedly opposed to the use of purgative medicines, and places his chief reliance upon opiates and venesection. From my own limited observations in the disease, and from the more extensive experience of those with whom I have conversed, I am decidedly of opinion, that the mild and soothing plan of treatment is that from which the greatest advantage is to be derived, and that purgatives in every stage are most pernicious—that the grand indication is to avoid every species of irritation, to allay that which already exists, to sustain the strength of the patient, and to maintain the intestinal canal as nearly as possible in a state of absolute rest.

CLINICAL REPORTS.

Fistulæ in perineo, communicating with the rectum, bladder, and urethra, with stricture of the latter.

Private William Thompson, æt. 40, of the 41st Regiment, was admitted into Hospital on the 7th June, 1826, in consequence of the disease mentioned above. He arrived from India on the day of his admission, where he had served twenty years. For a long time he had laboured under urethral strictures, and in the spring of 1824, a large abscess formed *in perineo*, which gave rise to retention of urine, and the fistulæ that ensued.

On examination, I found that the smallest staff could not be lodged in the bladder, in consequence of a strictured condition of the membranous portion of the urethra. A fistulous opening existed on either side of the rapha of the perineum, near the root of the scrotum. When a probe was passed into that on the left side, it seemed to run towards the prostate, and by a little manipulation it could be passed into the rectum, about one inch above the verge of the anus. That on the right side assumed the same direction, but the probe could not be passed from it into the rectum. As it was impossible to lodge the staff in the posterior part of the urethra, it could not be determined whether the probe, when introduced as just described, entered the urethra; but that the fistulæ communicated with urinary ways was clear enough, for not more than one fourth of his urine was discharged through the natural passage; the remainder being ejected through the anus and perineum. His health was much impaired by climate and intemperance—his spirits were depressed, and he implored assistance.

Doctor Skey, Deputy Inspector General of Military Hospitals, and Dr. Hume, Surgeon to the forces, saw Thompson with me, and in consultation it was determined that some attempt should be made to relieve him by operation.

On the 20th June, he was secured, as in the operation for stone, and a staff introduced as far as the diseased portion of the urethra; then, seated on a low chair, I placed a probe in the fistulous opening, on the right side, and lodged its extremity near the neck of the bladder. I now made an incision from the fistulous opening to the verge of the anus, parallel to the rapha, but at two lines distance from it. This being effected, I dissected downwards until I exposed the anterior part of the prostate gland, and found that the probe was situated obliquely between it and the bulb of the urethra. During the prosecution of this part of the dissection I consigned the staff to assistant surgeon Ford, that I might be better enabled to defend the bulb with the fore-finger of my left hand, during the period I was dividing parts perfectly unyielding, covered with blood, and situated far from the surface. I next sought for the staff, found that its extremity lay in the bulb, and that its passage was prevented by a permanent stricture, behind which there was a fistulous opening, about the size of a barley-corn. The stricture which was situated in the anterior portion of the membranous tract of the urethra, was then laid open, and the staff subsequently lodged in the bladder. I now passed a director somewhat curved, into the rectum, and on it a probe-pointed bistoury. I then took the director in my left hand, the bistoury in my right, and by a common movement, threw back the handle of the former, by which its point was projected through the anus, and brought forward the handle of the latter, so as to increase the angle between the cutting instrument and the conductor; thus completing the dilitation. Having succeeded so far, I now discovered that a sinus passed backwards and perforated the left side of the base of the prostate. Seeing that all my labour must be useless if I left this undilated, I introduced a probe through it into the bladder, which being held by my assistant; Staff Surgeon Hume, I divided the perineum downwards and outwards between the verge of the anus and the tuber of the ischium, and then with a scalpel conducted by the staff (already lodged in the bladder) I threw both openings into one, as in the lateral lithotomy. This being completed, I directed my attention to the fistula on the right side. By a probe, I found that it crossed the perineum behind the bulb, and communicated with the dilated sinus before the prostate: consequently, it was evident, that the bulb could not escape injury, if it was dilated in a perpendicular direction. Therefore, to avoid all risk, I introduced a probe-pointed knife, and placing the fore-finger of my left hand behind the bulb, I made it a fulcrum for the extremity of the knife, whose handle I steadily brought downwards, forwards, and inwards; thus making an oblique section of the parts, and avoiding all risk of wounding the bulb. A gum elastic catheter was then lodged in the bladder, and the wound lightly dressed. It would be useless to give the daily reports subsequently made on this case; suffice it to say, that no untoward symptoms followed the operation. On the 20th July, all his urine flowed freely through the natural passage, the catheter having been removed on the preceding day. On the 10th August the wound had healed, and on the 23d he was discharged the hospital, well.

Fistulæ in perineo, combined with stricture.

Michael Mooney, æt. 46, of the 41st Regt. On his arrival from India on the 23d of June, 1826, was admitted into hospital. He had been strictured for years, and a few months previously, whilst on his passage homewards, was attacked with retention of urine, and a large abscess formed *in perineo*, which, after a short time, gave way and discharged much urine mixed with pus. He now became emaciated and exhausted, suffered daily from rigours and profuse perspirations, and was scarcely ever free from excoriation of the perineum, inside of the thighs and scrotum.

On examination, a fistulous opening was found to exist on each side of the perineum, near the tuber ischii, and to pass upwards, inwards, and forwards, to the back of the bulb. The smallest staff could not be lodged in the bladder, in consequence of a firm obstruction about the region of the bulb. He stated that since the abscess gave way, he had passed more than one-half of his urine through the fistulæ; and this I proved from actual observation to be a correct statement. In consultation with Dr. Skey and Hume, we agreed upon the necessity of an operation; still from the impaired state of our patient's health, it was thought prudent to delay it, until he recovered from his tedious voyage, and gained a little more strength; however the desired change not taking place,—on the contrary, exhaustion increasing, delay appeared unjustifiable, and with the consent of the gentlemen above mentioned, I proceeded on the 1st of August as follows.

The patient being fixed, as in the operation for stone, a staff was passed as far as possible into the urethra; then, with a director and bistoury, the sinuses were laid open. I now dissected for the end of the staff, and found that it was lodged in the anterior part of the membranous portion of the urethra, behind and above which, there was an oblong fistulous opening. Finally, I dilated the stricture, and consequently was enabled to pass a small gum elastic catheter into the bladder. The wound was then dressed from the bottom, and the patient placed in bed. For five days subsequent to the operation, most of his urine passed by the catheter, which he wore without suffering any inconvenience; but at this period, the parts surrounding the wound became affected with erysipelas, and the vesical irritation was so great, that it became necessary to remove the catheter. He was, however, gradually recovering from this attack, when low fever and gangrenous erysipelas of the perineum suddenly seized him, of which he died on the evening of the fourth day from the commencement of the attack. The treatment consisted in the exhibition of wine, sulph. quinine, strong beef tea, and the application of emollient cataplasms.

Sectio Cadaveris.

Head, } No disease.
Thorax, }

Abdomen—The contents of this cavity were sound, save the liver, which was somewhat enlarged and condensed.

Pelvis—The bladder was diminished in size, thickened, and its lining membrane highly inflamed. It contained little urine and much muco-purulent matter. The membranous portion of the urethra was completely destroyed, and from the arch of the pubes to the tubera of the ischia, every tissue had been so altered by disease and death, that I could not distinguish between them.

A case of fistulæ in perineo, attended with peculiar circumstances, in which the bladder was opened through the perineum for retention of urine.

—— Wedd, aged 67, but of good constitution, on the 4th May, 1827, applied to Mr. Tribe, surgeon, at Rochester, in consequence of difficulty in passing his urine. On examining the urethra, Mr. T. found that it was nearly obliterated about the membranous portion, being unable to pass the smallest cat-gut bougie to the neck of the bladder, and further, that a tumor, of great hardness, extended from the arch of the pubis to the verge of the anus. The patient stated he had been strictured for 30 years, and that this disease was produced by force directly applied. In the end of March, an abscess formed in the perineum, which burst, and continued for some days to discharge urine; but about the 10th April it healed, and from that date, the tumor, above alluded to, commenced and progressively increased. Leeches and fomentations were repeatedly applied, cathartics, (chiefly oil) with opium, were freely exhibited, but without advantage; for on the 17th of the month he laboured under retention of urine, and the tumor became red, as if about to suppurate. Cataplasms were employed, and the previous treatment, with the exception of leeches, and the addition of warm hip bathing continued. On the 19th, Mr. T. discovered fluctuation on the surface of the tumor, and by an inscision, gave vent to about an ounce of fœtid pus, and some urine; but the retention remained unrelieved; and on the 20th I was called to see the patient, when he was in the following condition. Pulse, 120, small, and hard, respiration hurried, singultus, countenance sunk and anxious, great and rapidly increasing debility, some low delirium, extremities rather cold, face, neck, and breast covered with a clammy perspiration, odor offensive, vomiting and tenderness of abdomen, particularly above the pubis. The bladder could not be felt, and on examination per anum, the prostate gland was discovered to be so much enlarged, that its base could not be reached. The perineum was greatly swollen, and of a stony hardness, with a superficial abscess, (that had been opened) near the root of the scrotum, from which a sinus passed backwards, and discharged small quantities of urine.

After considering the case, there appeared an immediate necessity for evacuating the urine. The prostate which was so much enlarged, presented the possibility of operating through the rectum, and to attempt it above the pubis would be hazardous, because the abdomen was very prominent, and the bladder, as it could not be felt, in all probability was, from the duration of the disease, thickened and contracted. Finally, the perineum appeared the only place left for the performance of the operation; but the difficulty of passing a staff beyond the root of the scrotum, and the increased depth and hardness of this region, were circumstances strongly opposed to the success of the operation. However, as without some attempt, the consequences of delay would inevitably be fatal, assisted by Mr. T., I proceeded as follows:—

The patient being placed on a table, as for lithotomy, I cut downwards through the tumor, as in the lateral operation, and after a cautious dissection of vascular and rigid parts, completed the section of the perineum, and arrived at the neck of the bladder. The prostate was then examined, and found to be much enlarged and indurated. Now making its connexion with the perineal ligament, a guide, I endeavoured by dissecting towards the arch of the pubis, to discover the membranous portion of the urethra; but from the condensed and unyielding state of all the surrounding parts, I was completely foiled in the attempt. To add still more to my mortification, a vessel sprang, which poured out blood as freely as the internal pudic; but from its situation I have no doubt, it was the artery of the bulb, enlarged by the perineal disease, and to secure it at such a depth from the surface, amongst callous parts bathed in blood, would be impossible. Therefore, I made pressure on the bleeding point, towards the arch of the pubis, and gently pushed a scalpel through the prostatic portion of the urethra, entered the bladder, and divided about half an inch of its neck; when one pint of fœtid urine was evacuated. This being effected, I consigned the bleeding vessel to Mr. T., while with a curved director, its point being turned towards me, under the arch of the pubis, and regulated by the opening in the prostatic, I conducted it with much difficulty into the membranous portion of the urethra, which, anteriorly was nearly obliterated. By a little examination, I now discovered an opening about the size of a barley-corn, in its posterior part. Then, with a probe-pointed bistoury, I laid the canal open even to the bulb. The pressure was now removed from the bleeding artery, but the hemorrhage returning, it was re-applied and continued for the space of an hour, which answered the desired end. Finally, a gum-elastic catheter was introduced, and the wound dressed lightly.

In consequence of bad health, I did not visit Wedd until he had recovered; but Mr. T., who attended him, informed me that on the eleventh day he removed the catheter, from which date he passed all his urine by the natural passage, and that in three weeks the wound had healed. About six months after the operation, the old man called on me, in consequence of another complaint. I examined him carefully, found that the perineum was healthy, and the prostate not more than half the size it possessed on the day of operation.* Moreover he stated that he had not passed his urine so well for thirty years.

I shall now offer a few remarks on these cases. 1. An abscess formed in the perineum of each patient, and the cause of the collection, as well as its characters, were the same in all—that is, a crevice formed in the urethra, posterior to the stricture, the urine was extravisated through it, created the abscess, and when pus was secreted, became amalgamated with it. 2. The inferior perineal fascia in each case, formed so great a resistance to the matter, that the different structures became distorted, separated, and compressed. In Thompson and Wedd, it was much more dense than in Mooney, for in the two former the matter pointed at the root of the scrotum, a region in which the fascia is naturally lax, whereas in the latter the evacuation took place near the tubera ishium, where this membrane is generally dense and resisting. In Thompson's and Wedd's cases, the passage of the matter towards the root of the scrotum, was facilitated by the laxity of the supermuscular cellular tissue, and in each of the three cases, it was prevented from passing the line which separates the perineum from the crura, in consequence of the close attachment of the above mentioned fascia to the rami of the ischia and pubes. In Thompson's case, the abscess was so large, that it not only extended itself upwards to the root of the scrotum, but downwards on the rectum, and in all probability the matter was discharged into this gut, and through the integuments nearly simultaneously. 3. From the histories of these cases, and the situations of the fistulæ, we must conclude that in each, the crevice formed slowly, and consequently that the effusion of urine followed in the same order; for if so large an opening as that which was found to exist in the urethra in the different cases, was rapidly established, the inevitable consequence would be, so great an effusion of urine as to distend the cellular membrane of the scrotum, penis, and lower part of the abdominal walls. In the cases before us, as in all those where the urine is effused slowly, the surrounding cellular membrane became irritated by the contact of this stimulating fluid, and the consequence was an effusion of lymph, which served as a barrier to, or limited the further extravisation of urine. So much for these cases conjointly.

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* In a gentleman between eighty-four and five years old, on whom I successfully operated for stone, I observed a similar change in the prostate. Some authors of high reputation, have related similar facts.

With respect to Thompson's case.—What shall we say of the sinus that perforated the left side of the base of the prostate? Did it precede, follow, or occur at the same time, with the opening in the urethra, and what gave rise to it? On these points all is conjecture; but nevertheless I shall express my views respecting them. Then, it appears to me, that when the inflammation of the perineum was at its height, and the urine retained, because of the spasm induced in the strictured urethra, the prostate partook in the disease,—an abscess formed in its substance, which opened into the neck of the bladder, and subsequently by ulceration from the internal side, the body of the gland became perforated; for it would not be reasonable to suppose, that it opened simultaneously, both internally and externally, or that it first opened into the perineum; because the prostatic fascia is too dense to permit this conclusion.

The result of the operation in this case, justifies some of the assertions of Vacca, respecting the recto-vesical operation for stone.

Finally, my reading has not furnished me with a case, where a a like fistula perforated the prostate, nor any where a similar disease, so extensive, was remedied by operation.

The only particular observation which I shall make in connexion with Mooney's case, is, that in unhealthy subjects, when the perineum is chronically inflamed, wounds of it are liable to be followed by erysipelatous inflammation. This fact I have so often verified in cases similar to the present, and even in those where the urinary ways have been sound, that I have no hesitation in pronouncing it roundly. In one of my Latin essays, published some years ago, when treating of fistulæ in perineo, I expressed myself on this subject in the following language:—

Hic quoque annotare licet, quod, antequam tales sinus omnino patefiant, omnis inflammatio superari debeat, hoc, enim omisso, erysipelas verisimiliter supervenient, idque generis vehementis delirio comitante, scrotum invadens, et in gangrænam desiturum, mortem quoque a tali aggressu inductam vidi.

Further experience has not led me to alter this opinion; nor could it, as the data upon which it was founded, rested neither in idle speculation or hypothetical deduction. Before I operated on Mooney, I expressed my doubts and fears; but the imperative nature of the case fully justified the proceeding, and led me, through duty, to do what I would have gladly avoided.

In the case of Webb, the stony hardness of the perineum was produced by the healing of the first abscess; for, as then, there was no exit for the urine, it irritated and distended the newly-formed cavity, and the consequence was a further effusion of lymph, which thickened and condensed the perineal tissues, to the extent mentioned.

With respect to the hemorrhage in this case, no ligature could have been applied to the bleeding vessel, and if some other means were not adopted, the patient would in all probability have sunk.

The method which I pursued, though the most disagreeable to me, was nevertheless the most advantageous for the patient. A coagulum formed in the vessel, and thus the hemorrhage was checked. Had I plugged the wound, the probability, is that from the pressure not being either forcible or well-directed, it would have proved ineffectual. EDITOR.

REVIEWS.

Jolly on Cold Affusion.

The subject under review, forms one of the leading articles in the first volume of the *Dictionnaire de Medicine et de Chirurgie Pratiques*, now publishing at Paris, in successive numbers.

The author treats his subject under the following heads:—1st, General Historical and Practical Observations. 2d, The Modus Operandi of Affusions. 3d, General Precepts relative to the Administration of Affusions.

From the writings of Hippocrates, it is very certain that cold affusions were constantly and successfully employed by the Greeks. They made use of them, particularly against *causas*, or ardent bilious fever, *typhus causodes*, *tetanus*, *gout*, *rheumatism*, *cerebral affections*, and in general against all painful diseases.

Whether cold affusions were used by the Arabians, appears very doubtful. We know that they were addicted to other forms of bathing; but it is nevertheless very certain that neither the Latin nor Arabian authors, have made any mention of them. Shall we therefore conclude, that they allowed a means so energetic, one too, on which the Greeks had passed so many encomiums, and on which they had left so many precious documents, to fall into oblivion? At all events it must be admitted, that for a long time, cold affusions obtained no place in the list of therapeutic agents, and that it was only in the year 1712, that Kœmpfer, who practised medicine at Java and Batavia, employed them constantly, and with the best success, in the treatment of rubeola. Afterwards Hahn, in 1737, Samoclowitz, in 1777, Wright, in 1780, Valentin, in 1785, Currie, in 1798, and Giaunini, in 1802, proclaimed their good effects in acute diseases, epidemic or contagious.

M. Jolly quotes Branderth, Frank, Gerard, and Recamier, as having employed cold affusions successfully in nervous, malignant, and ataxique fevers,—in frensy, encephalitis, menengitis, &c. Hillary, Barrere, Delavereque, Currie, Dalrymple, and Doucet, in tetanus, Bird and Tissot in nervous rheumatism, Huxham, Wedekind, and Recamier, in obstinate intermittents, Nardi in dysentery, Baumback, Walfers, Harders, and Aberle, in spasmodic croup, the Russians, in the *debut* of almost all acute diseases, Wedekind in cases of poisoning from opium, and also in asphyxia, Jagielski in puerperal peritonitis, and Currie and others in some eruptive diseases; besides he mentions their admitted efficacy in uterine hemorrhage, strangulated hernia, and nervous cephalalgia.

The authors who have written on cold affusions have given different explanations of the manner in which they act,—some suppose that they provoke a salutary re-action; others that they throw the nervous system into a state of commotion, and finally, others believe that they act as counter-stimulants. M. Jolly, however, gives an explanation of their *modus operandi*, peculiar to himself. He says, "We believe that cold affusions can be assimilated in every respect, to refrigerent applications; that like them, they act as sedatives when prolonged, and as stimulants when their application is instantaneous. All the difference consists in this, that the affusions extend their action over a larger surface than the refrigerent applications, and the impression which they determine is more vivid; but except this difference in intensity of impression, and the less sensible effect which results from the percussion of the liquids, there is a perfect identity between these two remedies. This principle being established, we cannot deny but that the affusions act by producing a consecutive re-action, or a direct sedation."

Impressed with these views, he lays it down as a maxim, that we ought to prolong the duration of their operation; because he thinks where they are used with a view of producing re-action, they are always injurious. Now, with all due deference to his opinion, it appears to me, he is not only mistaken with respect to their effects, but also with the manner in which they act. I am, from physiological reasoning, induced to believe, that re-action is a necessary consequence of affusion, and is really essential before any melioration can be produced in the disease for which they are applied. For, the great changes which take place, when the circulation is excited, and the harmony of this re-action peculiarly disposes the affected organs to resume their wonted functions. Hence practical physicians generally choose the period of exacerbation for the application of the affusions: because, in *this state*, the system is capable of re-acting more powerfully against the application of cold.

M. Jolly says, "that the water made use of, should have a temperature from 10 to 15 d. R.; but that it may be necessary in some cases to increase or decrease it. Perhaps it may even be proper in the majority of cases, to commence the affusion with luke-warm water.

It is impossible to limit, in a general manner, the time the operation should last. This can only be determined by the effects which the affusions produce, and these effects depend upon the susceptibility of the patient, the intensity of the disease, and the force of re-action possessed by the individual. Sometimes eight or ten affusions are sufficient, in others twenty or thirty become necessary."

Finally, he terminates his important essay, by observing that as little time as possible should be lost between the affusions, and that after the operation, the patient should be rubbed dry, and placed in bed.

Dissertation inaugurale présentée et soutenue à la Faculté de Médecine de Paris, le 18 *Janvier*, 1828; *par Eugène Legallois, D. M. Broch, in* 4*to de* 36 *pag: Paris*, 1828; *Didot, jr.*

Inaugural Dissertation, presented and defended before tha Faculty of Paris, by Eugène Legallois. &c. &c.

In this dissertation, the author compares the results of the experiments made by his father, with those of M. Flourens. At the same time he claims for his father the priority in many opinions since advanced by Charles Bell, and asserts, that Gall has condemned many things in the work of Légallois, which he himself has advocated.

We shall give to our readers, without comment, the proofs which M. Legallois, jr. has advanced. 1st, M. Flourens, (1824) page 142. "When a portion of the brain or spinal marrow is destroyed, and a certain function immediately ceases, we correctly say that the function depends upon the part destroyed. It is in this way we know that the first respiratory movement has its origin in the *medulla oblongata* where the eighth pair of nerves arise. And in the same manner we can, to a certain degree, assign to each part of the brain its proper office. We shall have more success in these experiments, if we select for the subject of them, animals which, from their age, can sustain for a long time, the stoppage of the circulation."

2d. *M. Flourens*, (1824) page 111. "I have chosen for my experiments, young animals, which can bear mutilation in proportion to their age."

Legallois, (1812) page 137. "In rabbits just born, life will continue for ten minutes after the sudden cessation of the circulation, either from ligature, or from tearing out the heart. When they are five days old, they will live, under the same circumstances, for two minutes and a half; and not more than one minute if they be thirty days." Page 138. "The same will hold good after destruction of the spinal marrow."

3d. *M. Flourens*, page 11. "They always experiment at the same time upon several parts of the nervous system, without properly isolating the part upon which a particular experiment is made." Page 301. "The great desideratum has been, to discover a manner of experimenting, which should at the same time isolate an organ and its properties."

Legallois, (1812) page 64. "If we open the cranium of a young rabbit, and take out from before backwards successive portions of the brain, we can remove the cerebrum, the cerebellum, and part of the *medulla oblongata*, but the respiration will cease the moment we divide the origin of the eighth pair of nerves."—[*Exp. sur le pr. de la vie. 2d edit.*]

4th. *M. Flourens*, page 5. "*Haller*, *Zinn*, *Lorry*, *Sancerotte*, and all who have succeeded them, have opened the head with a trephine, and perforated the brain without knowing what parts they were wounding, or where to refer the phenomena they observed." Page 321. "The experiments of *Lorry* and of *Legallois*, are new rather in their results, than in the manner of conducting them. For as the part experimented upon was not completely isolated, neither could its properties be."

Legallois, page 17. "To find in the brain of an animal, the seat of the organ of voluntary motion, it is only necessary to remove successive portions, till we find that motion suddenly ceases. My researches have lead me to suppose that it is near the *medulla oblongata*."

5th. *M. Flourens*, (1824) page 8. "There resides in the cerebellum, a power or property of which physiology has as yet told us nothing, and which consists in the ordering or co-ordering of the voluntary motions, by one set of nerves which have been previously excited by another."

Legallois, (1812) page 15. "If we examine the movements of a decapitated Salamander, we shall find them entirely without an object. At one time he will place himself in such a situation, that he can neither advance nor retreat; or if he should chance to go a little forward, he will immediately resume his former position." Page 10. "After the section of the spinal marrow, the animal is in this respect in the same situation as if he had lost his head." Page 17. "Reptiles, after decapitation, have some command over their movements; but upon close examination, we will always find some part of the posterior portion of the brain, united to the trunk—*thus indicating in what particular part, the organ of voluntary motion resides*."

6th. *M. Flourens*, page 314. "The sensations, the instincts, volitions, and all the intellectual and sensitive faculties, reside exclusively in the lobes of the cerebrum."

Legallois, page 21. "The sentiments and the voluntary motions can exist in a decapitated animal."

7th. *M. Flourens*, page 92. "A chicken whose cerebral lobes had been cut away, and who survived ten months, lost her powers of volition, of recollection, and of judgment." Page 88. "The day after the operation, she raised her head, ruffled her feathers, sharpened her beak, pecked, and moved from one foot to the other. Thus a person who is asleep, will change his position, stretch his limbs, gape, and start, without awaking." This chicken judged of her fatigue, and the way to relieve it. Before judging, she must have been conscious of it; to relieve it, she moved; and in order to move, she must have willed. She had not then lost "*her powers of volition*, *of recollection, her senses, nor her intelligence."* She felt, she perceived, she judged, she willed, and she moved.

Page 92. "The cerebral lobes are the sole receptacle of the sensations, instincts, and intelligence."

The "*Sensations.*"—Is not fatigue one of them?

The "*Instincts.*"—Is not the act which determines a particular movement for a particular end to be considered as coming under this head?

"*Intelligence.*"—Are not the instincts the elements of intelligence?

M. le baron *Cuvier* (l. c. p. 83. *Rapport*) admits that in this case there was sensation and volition; but that they only lasted for a short time. If there was volition, there was must have been judgment:—Volition presupposes on the one part an object to obtain, and on the other, efforts to obtain that object; and in the third place, an operation of the mind, which compares the end with the means, and proportions the one to the other. Now what is this, if it be not judgment? We then then find, that even according to M. Flourens, there is, after the removal of the cerebral lobes, sensation, volition, and intelligence; and if my conclusions be admitted, judgment must be added.

It is no less true, (page 212) that "all the intellectual and sensitive faculties reside exclusively in the cerebral lobes, occupying conjointly and concurrently the same situation in this organ, so that when one disappears, all disappear; when one returns, all return."

8th. *M. Flourens*, page 96: "The movements of animals, deprived of their cerebral lobes are without connexion, without an object, and without effect.

Nevertheless, "the chicken sharpened her beak and dressed her feathers. The movements were evidently caused by the fatigue of remaining in one position. If any one disturbed her, she ran, jumped, or walked, with perfect regularity."

Legallois, page 19. "After a Guinea pig, of any age, has recovered from the stupor caused by decapitation, it appears to feel great pain from the wound. He continually moves one foot before the other, and shakes them, as if to scratch his neck. Cats act in the same manner."

9th. *M. Gall*, Vol. 2d, page 75, says, "Legallois, in decapitated animals, evidently confounds the phenomena of automatic and animal life."

Legallois, page 41. "It is well ascertained that birds not only live, but run and walk, for some time after the loss of their heads. This has been proved by many physiologists, in the decapitation of Guinea fowls, chickens, ducks, and pigeons.—*Lametrie*, *Kaauw*, *Boerhaave*, *Haller*, *M. Cuvier*."

10th. *M. Gall*, l. c., page 84: "Is a man who runs, an automaton? It must be admitted that all the pretended experiments made upon decapitated animals, who are said to have manifested sensibility, and to have possessed the power of locomotion, have never been made, but only exist in the minds of the experimenters."

Humboldt, Halle, and Percy: "It has been proved by M. Legallois, that the section of the spinal cord in the cervical region, stops the respiration, without affecting the sentiments or the powers of volition."

11th. *M. Gall*, page 72: "The brain can be the only seat of consciousness or the perceptive powers, and without it, no sensation could be produced, either by an external cause or an internal impression. We should not attribute any of the phenomena of the nervous system, (with the exception of the brain) to the sensitive faculties or to the spontaneous ones, but solely to irritability."

M. Gall, page 84: "I have strong reasons for believing, that the part of the nervous system which does not belong to the brain, can without any intervention of the brain, receive impressions. By this I mean, that it can have sensations and consciousness; it can preserve the recollections of impressions; and that it is capable of animal volition." page 90: "I have always maintained, in my public lectures, in opposition to the received ideas of philosophers, that at least in the inferior animals, each organ of sense had its own proper functions, its proper power of receiving and of perceiving impressions, its proper consciousness, and its proper faculty of recollection."

That which is true of an organ of sense must be equally true of the cerebro spinal system, where the nerves are received. It is conceded then, that a part of the nervous system, unconnected with the brain, may present phenomena due to the sensitive and the voluntary faculties, and these phenomena must be, perception, consciousness, and volition—an admission which proves that the sensations and voluntary movements may remain after decapitation: a fact which my father has asserted, and indeed proved "*le scalpel à la main.*"

12th. *M. Flourens*, page 182: "*Legallois* had already shewn, by the most exact experiments, from what particular part of the spinal marrow arose the nerves commanding or regulating the respiration."

M. Flourens, (1824) page 178: "Neither *M. Lorry* nor *Legallois* have pointed out that particular part of the spinal marrow, the destruction of which will annihilate the movements of inspiration."

13th. *M. Flourens*, (1824) page 178; "If the inspiratory movements be isolated from a particular part of the *medulla oblongata* they will at once be destroyed. Consequently, they must depend on that part. This effect will be produced by cutting away the part without touching either of the nerves."

Legallois, (1812) page 134: "The origin of the power of respiration, resides in that part of the *medulla oblongata* giving rise to the eighth pair of nerves."

14th. *M. Flourens*, page 181: "*Legallois* places this point at the origin of the eighth pair." He adds in a note:—A positive proof that the eighth pair of nerves are not the only and exact seat of the respiratory power, may be drawn from the fact, that they may be cut across without destroying respiration." My father who had made this experiment a long time before M. Flourens, has never asserted that the origin of the eighth pair of nerves was the sole and precise spot from whence the respiratory power sprung. On the contrary, he has admitted that this phenomenon was one of the great mysteries of the nervous system. *M. Flourens*, cites this passage, and believes he has cleared up the whole mystery, by stating that the first incentive to inspiration must reside in the *medulla oblongata*, because it is the seat of all the movements tending to self preservation, (p. 138,) L. c. p. 184. "In the *medulla oblongata* reside the first movements of inspiration, of crying, of gaping, of certain evacuations, and of certain attitudes, or, to speak more plainly, of all the movements necessary to self-preservation." In asserting that the *medulla oblongata* has the supreme command over the powers of self-preservation, M. Flourens assumes a fact, which yet remains to be proved, and leaves us a mystery which is yet to be explained.

15th. *Ch. Bell*, (1825) page 146. "Great lesions of the brain, though generally fatal, are not necessarily nor instantaneously so; but a contusion of the *medulla oblongata*, from whence arise the eighth pair of nerves, must be followed by instant death."

Legallois, (1812) page 64. "If we open the cranium of a young rabbit, and take out from before backwards, successive portions of the brain, we can remove the cerebrum, the cerebellum, and part of the *medulla oblongata*, but the respiration will cease the moment we divide the origin of the eighth pair of nerves."

16th. *Ch. Bell*, (1825) page 169. "The infant born without a brain, can breathe, if the origin of these nerves be entire."

Legallois, (1812) page 214. "Whatever part of the brain may be wanting in a child, it can both inspire and expire, if the origin of the eighth pair of nerves be present. And the duration of its existence will depend upon the integrity of the *medulla oblongata*."

17th. *Ch. Bell*, (1825) page 169. "Instead of one respiratory nerve, the *par vagum*, the nerve so called, is found to be the central one of a system of nerves of great extent."

Halle, De Humboldt, Percy, (1812.) "It has been shewn by *M. Legallois*, that the principle of all the movements of respiration, resides near that part of the *medulla oblongata* where the eighth pair of nerves arises."

18th. *Legallois*, (1812) page 64. "From facts observed in the course of my experiments, I have been induced to believe, that the accessory nerve of the eighth pair, has a great deal to do with the dependance which the respiration has, upon the *medulla oblongata*. The course and distribution of this nerve, is singular, and its particular province is evidently unknown."

Ch. Bell, (1824) page 33. "In this course of inquiry it was natural to ask why the Spinal Accessory of authors arose from the spinal marrow in the neck? why it ascended into the head, to join itself with the *par vagnm*, instead of following the direct and short route to its destination on the muscles of the neck and shoulder, like the spinal nerves? I divided its branches in the living animal, and by that means cut off certain muscles from partaking in the act of breathing, while they retained their office under the other nerves; that is, they remained under the direction of the will when they had ceased to be influenced by the lungs."

19th. *De Humboldt, Halle, and Percy* (1812.) It is certain that it is by means of the intercostal nerves, consequently of the spinal marrow, that the *medulla oblongata* acts upon the muscles which move the ribs, and the same thing may be said of the diaphragm. This has been fully proved by *M. Legallois.*

Ch. Bell, page 130. "In animals that breathe by ribs and a numerous class of muscles, and which animals have a spinal marrow, we see that a column of nervous matter is embraced between the anterior and posterior *virgæ* of that body, and that this portion may be traced downwards between the roots of the spinal nerves. From the upper part of this column, where it begins in the *medulla oblongata*, the several nerves proceed which have formed the subject of these papers, and on the influence of which, it has been proved, the motions of respiration principally depend. It is not an extravagant conclusion to say farther, that the power of the regular succession of intercostal and lumbar nerves, as far as they regulate the respiratory actions, proceeds from the connexions of the roots of these nerves with this column, which is continued downwards, and which can throughout be distinguished from the rest of the spinal marrow." Page 22. "The anterior column of each lateral division of the spinal marrow is for motion; the posterior column is for sensation; and the middle one is for respiration. The two former extend up into the brain, and are dispersed or lost in it; for their functions stand related to the sensorium: but the latter *stops short in the medulla oblongata.*"

We have thus reached the point from whence M. C. Bell started, and which is the same at which my father stopped, and to which he called the attention of physiologists.

L. c. p. 64. "Respiration does not depend entirely upon the brain, but also upon a small part of the *medulla oblongata*, situated near the occipital foramen, towards the origin of the eighth pair of nerves." Page 63. "The nerves which serve the purposes of respiration, arise from the spinal marrow, in the same manner as those which are distributed to the other parts of the body. How is it then that after the removal of this part, the movements of respiration are the only ones destroyed? It is to me, one of the great mysteries of the nervous system, the explanation of which will throw the greatest light upon this wonderful power."

20th. *M. Flourens*, l. c. page 194. "In full grown animals, the circulation sustained by insufflation, will continue after the entire destruction of the nervous system; and in very young animals, will remain without its aid, (page 216) even until the blood turns black." Page 194. "This continuance of the black circulation, in young animals, is a fact not less constant than remarkable. (Ibid.) When I speak of the utmost limits of the circulation, I refer entirely to the carotids."

Legallois, page 114. "The circulation is suddenly arrested by the destruction of the spinal marrow." Page 111. "If after this destruction, we inflate the lungs, the blood will be pressed out from the pulmonary veins, into the left auricle of the heart, and from thence there will be some particles of red blood sent into the carotids, after every other sign of the circulation has disappeared. The quantity however will be too small, either to fill them, or to give them any rotundity,* consequently the circulation must have ceased." Page 86. "Hemorrhage is a certain proof of the continuance of the circulation in young animals, where the *foramen orale* is yet open. The movements of the heart, which remain for a certain time after death, have a certain force, although not sufficient to propel the blood from the arteries into the veins. Yet they will force it through the opening of a large artery.

The venous blood, which, after death, accumulates in the right cavities of the heart, passes into the left through the *foramen orale*, and serves to continue the hemorrhage, as long as there is any motion in this organ. This hemorrhage, however, though coming from an artery, will consist entirely of venous or black blood. In this way the hemorrhage will give us a good idea of the state of the circulation."

21st. *M. Flourens*, page 216. "Legallois believed that the circulation depended immediately upon the spinal marrow."

Legallois, page 144. "The heart receives its principal nervous filaments, from the great sympathetic, by which alone it collects its powers from all parts of the spinal marrow."

22d. *M. Flourens*, (1824) page 14. "We may establish two or three centres of irritation, by cutting across several portions of the spinal marrow."

Legallois, (1812) page 22. "Several distinct centres of sensation may be established, by any thing affecting the seat of the nervous power."

23d. *M. Flourens*, (1824) page 237. "Every part of the nervous system has its own peculiar function, but the energy of each part, influences that of every other."

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* **The emptiness of the carotids, is an infallible sign of death, even if the movements of the heart can be distinctly felt.**

Legallois, (1812) page 20. "The influence of the brain over every part of the spinal cord, is not only for the purpose of regulating the voluntary movements, but also for increasing their energy. The movements of a decapitated animal, are much weaker, than of one who retains its head." Page 151. "The *medulla oblongata* also exerts some influence over the action of the heart, of which I shall speak at another time."

24th. *M. Flourens*, (1824) page 240. "Besides its own proper action, which each part has, it has an action common to every other part, and every other part has an influence over it." Page 237. "It is this reciprocity of action, which forms these various parts into one system."

Legallois, (1812) page 21. "The unity of self, of which we are conscious, would seem repugnant to the dissemination, through the whole extent of the spinal marrow, of the principle of life; but it must be recollected, that the connexion and harmony of every part of this power, are sufficient to give us the feeling of unity, without the power being concentrated upon any one given point."

25th. *M. Flourens*, (1824) page 47. "The proper manifestations of the mind, do not require the integrity of every portion of the brain."

Legallois, (1812) page 127. "If, after a proper ligature of the vessels, we cut off the head and tail of an animal, leaving nothing but the thorax, life may be retained. This may be seen by the movements of the fore-feet, and by the sensibility displayed if we pinch its skin." Page 129. "I have several times retained life for three quarters of an hour, in a rabbit of thirty days old, when the breast was the only part remaining."

26th. Does the first idea of the work of M. Flourens, the plan which he calls peculiarly his own, really belong to him? Where did Mr. C. Bell get the germ of his beautiful researches on the respiratory nerves? Were they any thing more than the developement of principles taken from the French school, and the extensions of truths discovered by Le Gallois? Is M. Gall himself free from the contradictions with which he reproaches M. Legallois? Has he (M. Legallois) said those things which they have attributed to him; and those things which he has said, have they rightly comprehended? Have not the experiments of these physiologists been lately repeated by Messrs Cliff and Wilson Philip, who have drawn from them different conclusions? May not these gentlemen have seen as M. Flourens saw? and I now ask, has M. Flourens always seen correctly?

GLEANINGS FROM FOREIGN JOURNALS.

Observations on the treatment of Cynanche Tonsillaris, by Dr. Cabaret.—The object of the author is, to shew that the proper method of treating amygdalitis, consists in drawing blood directly from the inflamed parts. This local blood-letting, he performs by means of a lancet, furnished with a shank, which passes off from it at a right angle. He has mentioned a great number of cases, which resisted general blood-letting, leeching of the external fauces, pediluvia, emollient cataplasms, and acidulated and soothing gargles; which were relieved, and finally remedied, by scarifications.—[*Annales de la Medecine Physiologique.*]

I am not credulous enough to join in this opinion; to me it appears that scarifications, would be likely to have the same effects in tonsillitis and conjunctivitis;—effects in both undoubtedly prejudicial, and with reluctance and chagrin, I am, from no small share of experience, inclined to side with Odier, who in his *Manuel de Medecine Pratique*, p. 57, says, that in spite of the most active treatment, acute quincies are apt to terminate in suppuration.—EDITOR.

Dr. Pelaggi on Acupuncture in Pleurisy.—The author furnishes three cases, where he followed this practice with decided advantage. The first, was that of a man aged 55, who from exposure to cold, was attacked with pleurisy, which yielded to anti-phlogistic means. However, on the third day the pain re-appeared, and yielded to the application of two needles under the right breast, and two others under the corresponding scapula,—in the pained parts. The needles did not penetrate the thoracic cavity, and they were allowed to remain inserted for fourteen minutes. The pain again returned, and was relieved in the same manner. On the tenth day, the patient was convalescent.

The second was a man aged 40, who laboured under intense pleurisy. Acupuncture relieved the patient as often as the pain returned, and until he had perfectly recovered.

The third was the case of a man aged 22; besides pleurisy, he laboured under hæmoptoe. Acapuncture was practised, and tartar-emetic exhibited. He also recovered.—[*Giornale di Chirurgia pratica.*]

Those endowed with wonder, may admire this innovation; but those who have that happy combination of the faculties, which gives rise to common sense, will be slow to admit that an inflammation of the pleura, ever yielded to a few needle punctures. May not the two first patients have laboured under *pleurodonia*, and the latter have been cured by the tartar-emetic? At least, this appears most probable.—EDITOR.

Perforation of the Duodenum.—A lad aged 17, for many months complained of pain in the epigastrium; during six weeks he had loss of appetite, nausea, and general uneasiness. On the 10th Dec. 1827, three hours after his breakfast, he was suddenly attacked with violent pain in the belly, and vomited mucus tinged with bile. On the morning of the 11th, his skin was covered with a cold perspiration, pulse was frequent and small, abdomen painful, tongue pale and humid, and his vomiting had become purely billious. Forty leeches, and emollient fomentations were applied to the belly; but without effect, for towards evening he expired.

On opening the body, general signs of peritonitis were discovered. Immediately at the origin of the duodenum, there existed an oblong ulceration, three or four lines in diameter, larger towards the mucous than peritoneal tunic. Another large ulceration existed in the lower part of this intestine, but did not perforate it. The other viscera were healthy.—[*Journal Universal des Sciences Medicales.*]

A case similar to this, has fallen under my observation. The perforated intestine is prepared, and deposited in the Medical Staff Museum, Fort Pitt.—Editor.

Professor d'Outrepont de Wourtzbourg, on Cold Injections in Uterine Hemorrhage.—The Professor looks on cold as one of the best remedies for checking uterine hemorrhage, but he is decidedly opposed to cold injections; for he believes that they but too frequently give rise to malignant diseases, such as polypi, scirrhus, and carcinoma. "Where is there," says he, "an accoucheur, who has not seen *metritis* develope itself after uterine hemorrhages, without being able to account for the cause of the disease, in connexion with the previous loss of blood? The explanation, however, is easy, when we recollect how uterine hemorrhages are treated,—that is, by cold injections, and large doses of canella and opium." M. d'Outrepont, in his clinique, never uses injections, but contents himself with cold applications; after which he directs the skin to which they have been made, to be well rubbed with dry cloths. "At a later period," says he, "I advise lukewarm fomentations." Since he has adopted this method of practice, he has not observed a case of puerperal *metritis* to follow uterine hemorrhage.—[*Graefe und Walther, Journ. der Chirurgie*, t. xx.]

A Case in which a Living Infant was taken from the Womb of a Woman who died from Hæmoptitis.—A woman aged 24, in the seventh month of pregnancy, entered the Saint Louis on the 2d of June, 1329, labouring under phthisis pulmonalis. On the 17th of July, fifteen days before the termination of pregnancy, a violent hæmoptisis set in, under which she expired. M. Huguier arrived at the moment of her death, and made, with all possible haste, an incision in the linea alba, opened the uterus, seized by the feet, and extracted, a fine male child. The infant inspired with difficulty; but at this day it lives, and enjoys perfect health.—[*La Lancet.*]

Case of Tinea Mucosa, cured by Rubéola—by Dr. Bruguier.

Henry Roux, at his birth was apparently a healthy child; nevertheless, about his fourth month, a roughness, with pimples, appeared in the region of the salivary glands. The epidermis was covered with pustules, and seemed as if it would be detached in scales; from underneath which issued a matter that was converted into a green crust. The disease made such rapid progress, that in a few days the whole face was involved, with the exception of the end of the nose, upper lip, and tip of the chin. The skin of the head was also partially affected. As fast as the scales were detached, they were replaced by others. The dentition of the child was a little retarded, and the stools scanty; but all the functions were well performed. The cerebral organs were well developed. I ordered the syrup of pansy (*viola tricolor L*) with active purgatives, and a blister on the arm. The blister suppurated profusely, and its surface was covered with the same kind of scabs as those of the face, which continued through the whole course of the disease; a circumstance which induced me to believe the fluid systems were vitiated. The patient remained in this situation for five months, when he was attacked with Rubéola. As soon as I was called in, I discovered in the dryness of the tongue, the continued sneezing, and the redness of the eyes, the nature of the malady;, and on the eighth day the eruption appeared, and extended itself over the whole face. I ordered the child's head to be covered with an oil cloth cap, which was to be alternated with one made of the leaves of the ivy (*hedere helix, L*) stitched together; for the purpose of promoting the discharge from the scalp, which, if checked, would certainly be fatal. The child took a little barley-water, with prunes, and was kept quiet in the cradle, covered in the usual manner. The fever was very light, and the disease took its regular course; and by its peculiar modification, completely cured the morbid affection of the dermoid tissue. The running caused by the application of the oil-cloth cap and the ivy leaves, continued for some time behind the ears and over the corono-pariétal suture.

Reflections.—Where was the seat of the tinea capitis, and where that of the rubéola? Might we not say that both these diseases could not at one time affect the same tissue of the skin? In what way did the rubéola affect the tinea capitis? Did it act in the manner of a derivative, or as the sulphate of zinc in obstinate chronic ophthalmia? This last appears the most probable, as the mucous membrane of the eye is only a continuation of the skin, modified and softened, and is very analogous with the organ which envelopes the whole body. It may be said, that the applications to the head had driven away the primary disease, by the formation of what might be called an artificial ulcer. This, however, cannot be substantiated, because the cure was too sudden; moreover, the blisters had, after five days suppuration, produced no good effect, and the other applications no longer acted. M. Alibret thinks that the seat of the tinea capites, was in the rete mucosum. If this be true, there is no reason why we may not employ the action of the rubéola in all cases of cutaneous affections, which have their seat in this tissue, in those persons who have not already had the disease, or who from their peculiar conformation, are liable to have it a second time. It would, however, be improper in any one but a medical philanthropist, placed in a convenient situation, to try the experiment, or to permit direct intercourse between persons affected with these two diseases.

Acute Ascites, cured by Antiphlogistics, Diuretics, and Purgatives—by M. Mey.

Peter Amorig, aged 19 years, on the 1st of April took a severe cold, from a sudden exposure, when in a profuse perspiration. At bed-time, he was attacked with shiverings, and in the night with a severe pain in the right hypochondrium. By the advice of his friends, he took the infusion of mint, wine, and pepper, for the purpose of exciting perspiration. In this he succeeded, but without deriving any benefit from it. The seat of the pain appeared to increase, with uneasiness and swelling of the abdomen. His appetite disappeared. His friends persuaded him that the swelling was caused by wind, and gave him carminatives, but without any advantage. The abdomen continuing to swell, he consulted a physician, who, thinking of nothing but the pain and uneasiness, ordered emollient applications to the belly, and two baths daily. The symptoms, however, continued to increase, the abdomen attained a great size, and the legs and thighs began to swell, and his skin to become yellow. I was called to him on the 23d of April, 1826, and found him with a jaundiced complexion and yellow eye, a dry skin, itching, rigours, diminished appetite, and a red and moist tongue. His thirst was excessive, with frequent inclinations to vomit—eructations and cholic, bowels constipated, discharges dry and hard, urine scanty and transparent. The belly was three feet four inches in circumference, and manifest fluctuation, left no doubt as to the nature of the disease. The hypochrondrium was very tender on pressure, respiration hurried and difficult, with a tense and moderately hard pulse. His legs were infiltrated. From all these circumstances, I concluded that the peritonæum was inflamed, particularly about the right hypochondrium; and that the serous effusion was caused by the increased activity of the exhalents. I ordered twenty leeches to be put over the seat of the pain; which was done, and the bites left open for four or five hours. A mustard plaster was applied to the thigh, emollient embrocations to the abdomen, and he was ordered to drink flax-seed tea and orange-water. April 24. Great pain in right hypochondrium: the same remedies continued. April 29. Belly decreased in size four or five inches; colour of the skin natural; swelling of the lower extremeties gone; urine clear, but very abundant. I ordered a lavement of flax-seed, which brought away a small quantity of indurated matter. Embrocations composed of the oil of hyoscyamus and the tinctures of opium and digitalis, were applied to the stomach, and the nitrate of potash was administered internally. By the 4th of May, there was a further decrease in the belly of six or seven inches, but fluctuation was still perceptible. The health of the patient was so much improved, that he considered himself as cured, and neglected to take any further precaution. In consequence of some exposure, he again took cold on the 5th or 6th of May, and experienced a severe pain in the left hypochondrium, and left cavity of the thorax, with great difficulty in respiration, and constant cough. His urine was very scanty. A poultice of roast potatoes and balm, was placed over the seat of the pain, and a mustard plaster to the left arm. On the next day, the pain had decreased very much, and on the following night had entirely left its original seat, and located itself in the belly, which speedily increased to its former size. Twelve leeches were applied; a camphor blister to the left thigh, with emollient cataplasms and embrocations. The same drink was continued. The pain in the side decreased, but the size of the belly remained the same. The urine was still scanty, notwithstanding the exhibition of several powerful diuretics. Bowels constipated. I now determined to neglect the urinary organs, and devote my whole attention to the intestine canal. May 10th. Ordered one scruple of calomel and two scruples of powdered squills, to be made into twenty-four pills, and the patient to take two each day. On the 13th he had two abundant stools; suspended the pills; the diuretic drinks were continued, together with the embrocations of laudanum, and digitalis. In consequence of the colic, produced by the pills, they were not repeated. Injections of mallows and honey were given, which produced each day, four or five copious discharges. The urine continued very scanty. The size of the belly decreased so rapidly, that on the 16th it had attained its natural dimensions. The patient completely recovered his appetite, and on the 20th, he went home perfectly cured.—[*Jour. Génér.*

Case of Pica, followed by vomiting of great quantities of the larva and eggs of gnats.—By M. Allorneau.

Louise Clairau, aged 19 years, a shepherdess, had, from her infancy, been in the habit of drinking the stagnant water of the pools and ditches in her neighbourhood. She entered, for the first time, the hospital of Thouars, about three years since, to be treated for ulcers on her legs and arms, which were speedily healed, but soon broke out again. The ulcers were of a pale red, and about the size of a five franc piece. A great quantity of serous fluid, of a pale yellow colour, was exhaled from them. She was again admitted into hospital on the first of June, 1827, with the same kind of ulcers on her legs and arms, which presented no extraordinary symptoms, till the 16th July, when she was seized with hiccough, nausea, and vomiting, which lasted for four or five days. On the 18th, the skin of the forehead exhaled considerable quantities of serous fluid, limpid, yellow, and of a saltish taste. On the following day the quantity was increased, but instead of its being exhaled as before, it passed from longitudinal divisions in the skin, which were so enlarged, as to form a great number of ulcers, of the size of a centieme. These cicatrized in two or three days, and the discharge ceased. In a few days, however, this singular phenomenon returned, and appeared successively on the wings of the nose, cheeks, forehead, chin, lower part of the neck, centre of the left breast, epigastrium, hypogastrium, thighs, and the legs. The mean duration of these fissures was about five or six days. After they healed, the skin became covered with deep brown scales, round, and rough to the touch. Hiccough, nausea, and retching, set in, and were accompanied with severe and burning pains, which ceased on the 19th and 20th, but returned on the 21st, and continued till the 24th. There was then an intermission of three days, when they recommenced, and continued without further interruption. Their duration each day was about four or five hours, and the period of their return irregular. The patient appeared very much fatigued by these violent efforts to vomit, which were ineffectual in bringing any thing, either solid or fluid, from her stomach. On the 12th of August, however, she vomited a great quantity of liquid, which was clear, and of a light yellow colour. I discovered floating in it, a great number of the eggs of the common gnat, and in the bottom of the vessel there was a thick, black, flaky, animal substance, emitting a very fœtid smell. The most singular circumstance, however was, to see in every part of the liquid an innumerable quantity of animals resembling worms, running and swimming about in every direction. In order to be assured there was no deception, I caused the patient to vomit in my presence, after having examined the cavity of the mouth, and the vessel into which the matter was received. The vomitings commenced on the 12th August, and were repeated on the 13th, 14th, and 15th, with the same circumstances, and at the same hours, and were always preceded by spasms, convulsions, and violent pains in the epigastric region. The total quantity of liquid vomited during these four days was 34¾ pints. In a few minutes after each evacuation this pain and uneasiness ceased, and a perfect calm succeeded. At the end of two hours she asked for food, and ate with voracity that which was given her, and fell into a profound sleep. On the 16th there was no vomiting, but on the 17th it re-commenced. The matter vomited had the same appearance as before, but it contained pieces of old linen and paper. I could not however, discover any animalculæ in it, but could see a great quantity of the eggs of insects, greenish, and of an ovoid form. The quantity was about a pint and a half. There was no further vomiting till the 24th, but on each day, from the 16th to the 23d, between the hours of eight and ten in the evening, the patient had convulsions, spasms, rigidity of the extremities, severe pain in the epigastric and umbilical regions, with a sensation of tearing and creeping in these parts, and a shifting of the pain from the centre to the circumference of the urethra, and sharp sudden cries, resembling the barking of a dog. This singular scene lasted sometimes for several hours. On the 24th, the vomiting returned, and continued daily, till the 13th of September, when they entirely ceased. The quantity vomited varied from one to three pints each day, till September, when it was reduced to a pint or a pint and a half. In the beginnning of this month, the patients in the same hospital had observed that Louise went very frequently into the privy, and remained there a long time. Suspicion being excited, she was watched, and discovered drinking the contents of the *vases de nuit* of the house, in which paper, old rags, &c. &c. had been thrown, which accounted for those things being found in the matter vomited. Upon being interrogated, she confessed every thing. She said she had for many years been in the habit of drinking the stagnant water of the ditches and morasses, during which time her skin had become covered with ulcerations and fissures, for which she had been admitted into hospital. Her desire for this liquid was insatiable, and the gratification of it did not affect her general health. About the middle of July, she began to take the contents of the privies, which she found more agreeable than the stagnant water, and continued to drink large quantities daily. Immediately after the introduction of this liquid into the stomach, she experienced, in that organ, a sensation of crawling, with great heat. For a few days preceding the 12th of August, she had taken this liquid in increased quantities, and on that day the vomiting commenced. As soon as this discovery was made, she was confined in a separate chamber, in such a manner as to render it impossible for her to indulge her depraved taste; a proceeding which put a stop to all the affections of her stomach. The effusion through the fissures in the skin ceased at the same time, and they were completely healed; but on the 5th and 6th of September, another effusion commenced from the umbilicus, consisting of a yellow fluid, serous, viscid, and of a nauseous, fœtid smell. It generally took place in the evening, and was preceded by tormina and tenesmus, and lasted for about a quarter of an hour. It issued in a continued stream, but the most accurate examination did not enable me to discover any solution of continuity in that part of the skin from which it came, and which was about the size of a five franc piece. The first appearance of this effusion was on the 6th of September, at 7 o'clock, P. M., and was renewed on the next day, during which time, the vomiting ceased. About noon, however, on the 8th, it came on again, when the effusion disappeared. On the 9th, 10th, and 11th, it again made its appearance in great quantities, when the contractions of the stomach were relieved. It was on the 12th September that the patient was confined in her room, from which time all the remarkable symptoms of her singular case vanished. During the whole course of it, the nutritive and assimilating functions were unaffected, the menstruation regular, the *en bon point* undiminished, and the appetite voracious. In my narration of the case, I have forgotten to mention, that the matter vomited on the 21st, 22d, and 23d of August, contained clots of blood mixed with fibrinous particles—that on the 25th a cutaneous hemorrhage took place from the right arm-pit—that on the 26th, a large quantity of blood issued from a spontaneous fissure in the right leg, and that on the 27th, there was an epistaxis of two or three hours' duration.—(*Journal Complément.*)

Liriodendrine, or the Bitter Principle of the Liriodendron Tulipifera; Tulip Tree or American Poplar. By John P. Emmet, Professor of Chemistry and Materia Medica in the University of Virginia.

[Read before the Philadelphia College of Pharmacy, February 1831.]

As this substance appears to have every claim to be considered a new and very well characterised proximate principle, and inasmuch as it exhibits no alkaline or acid properties, it will, in conformity with the prevailing practice, be described under the name of *Liriodendrine.* The decoction made from the bark of the tulip tree yields an abundant precipitate upon the addition of aqua ammoniæ, the caustic fixed alkalies, or their carbonates, and at the same time the solution loses its intense bitterness. This circumstance induced me to examine, more particularly, the substance thrown down, and although the result has shown the absence of an organic alkali, it led me to the discovery of a substance, interesting not only for its medical properties, but for its chemical habitudes. The Liriodendrine is indeed a very peculiar body, and it is not at all singular that hitherto it has passed for a resin. When not crystallized, but simply fused, the general resemblance is very great; but in its chemical properties it differs from every other substance with which I am acquainted.

The bark of the tulip tree, it is well known, has long been in use as a tonic and febrifuge, yet it must be admitted that its administration hitherto has failed to secure to it the reputation of a uniform and active medicine. Without assigning to the Liriodendrine more efficacy than exists in the bark itself, I am of opinion that its properties will readily account for much of this want of uniformity. A temperature of about 270° F. is sufficient to volatilize rapidly this bitter principle, and at the same time partly to decompose it. This circumstance struck me very forcibly before I succeeded in obtaining the Liriodendrine crystallized. An infusion or decoction of the bark has a hot and very bitter taste, leaving an impression upon the tongue similar to that produced by the canella alba, yet, when the solution is freely evaporated to dryness, these properties become so much impaired, that the residuary matter seems to be almost tasteless. Hence, so far from its being possible to form an extract from the Liriodendron Tulipifera by the usual process, it seems impracticable to boil the bark with water in covered vessels without effecting the decomposition of the active principle.

Mode of preparing Liriodendrine.—All the soluble salts, when added in sufficient quantity to saturate the aqueous solution of the bark, seem to occasion the precipitation of this substance; but as it is rendered soluble by the presence of colouring matter, it will be more completely displaced by the addition of some active bases, as the alkalies and earths. The objection to the use of the former is that the pectic acid, which abounds in the fresh bark, forms gelatinous salts, which interfere with the subsequent filtration; and when lime or magnesia is employed, it is difficult to effect a complete decomposition within the bark. The following I found to be a much more convenient process. The bark is to be stripped from the roots, dried, and finely pulverized; it is then to be steeped for several hours in cold alcohol. The fluid, when saturated, is to be removed, and fresh portions added until the bark becomes exhausted. By employing the alcohol hot, and straining forcibly through a strong cloth, this result will be accomplished, after three or four repetitions. The alcoholic solutions are next to be filtered, and transferred to a large retort, or alembic, and heated until at least two-thirds of the fluid have been recovered by distillation. Towards the end of the process, the impure Liriodendrine will separate, and collect at the bottom in large semi-fluid masses; it may be readily obtained by pouring out the contents of the vessel, and allowing the whole to cool. The remaining liquid is then to be gently evaporated in an open vessel, until it assumes the consistency of honey. The temperature should not exceed 200° F. This dark resinous looking mass is to be incorporated with the portion which separates during the distillation, and then triturated with a warm solution of caustic potassa, soda, or ammoniæ.

The alkalies remove a large quantity of colouring matter, and the Liriodendrine, being insoluble, separates, and may be brought together by a spatula. This treatment with caustic alkali must continue until the solution passes off colourless. The Liriodendrine in this state has a drab colour (which becomes lighter by exposure to soft water) and a waxy lustre. At a temperature of 30° or 40° it is hard and brittle, but softens in the hand, and bears a close resemblance to putty.

It appears, from an examination made upon a small scale, that the recent bark taken from the root, and dried at a temperature of 90° F., loses, by the repeated action of alcohol (holding 11 per cent of water, according to the centesimal alcohometer of Gay Lussac,) as much as 40 per cent. Of this amount the Liriodendrine composes more than 7 per cent.; but it was not easy to determine the exact proportion, inasmuch as the alkaline solutions always carry off a portion. I incline to believe that, on a large scale, it will be found more convenient to boil the impure tincture of the bark with calcined magnesia until the fluid assumes an olive green colour. It may then be concentrated by distillation, until it appears turbid, and in this state, when removed and gradually mixed with cold water (the fluids being agitated at each addition,) the Liriodendrine readily precipitates as a white powder, or, by repose, will separate in the crystalline state.

The peculiarities of this substance prevent us from obtaining it crystalized from *hot* concentrated alcoholic solutions. In this particular Liriodendrine differs essentially from salicine and the bitter vegetable principles hitherto described. If such a solution be examined with an eye-glass, it will appear saturated with exceedingly minute globules of an olive green colour, but there will be no indications of crystallization even after spontaneous evaporation; the Liriodendrine merely separates as a transparent varnish; water seems necessary for its crystallization, and in this state there is great reason for believing it is a *hydrate.* The water, however, should be added gradually until the colour of the solution becomes pearl white, and the temperature should be as low as 40° or 50°. The crystals obtained in this manner and by spontaneous evaporation are very pure; but always present different forms, among which may be observed triangular and rhomboidal plates, interspersed with plumose or stellated prisms; some of them are perfectly limpid, while others have the micaceous appearance of boracic acid. As the Liriodendrine may be washed with cold alkaline and acid solutions, without any loss, it is evident that it admits of complete purification.

The difference between *Liriodendrine* in its crystalline and fused states is very striking; crystallized, it freely dissolves in alcohol, forming a *colourless solution*, which readily furnishes crystals by spontaneous evaporation, and without the necessity of adding water; when gently heated, the crystals fuse, slightly effervesce, (owing to the escape of water,) and then become olive coloured, without any appearance of crystallization upon cooling. In the fused state, on the other hand, the alcoholic solution is always olive green, and scarcely gives any indication of a regularly formed deposition, unless the alcohol employed is dilute.

The alcoholic solutions of both varieties possess an intensely bitter taste, but always leave the impression of heat upon the tongue. Perhaps the combination of these properties may add to its value as an article of the materia medica; they seem at all events to be characteristic of the Liriodendrine in its purest state. The proper solvent for this substance is sulphuric ether.

In addition to the foregoing, it will here be proper to add the following remarks. Crystallized Liriodendrine is solid, brittle, and inodorous at 40°, fusible at 180°, and volatile at 270° F. When carefully heated in a glass tube closed at one end, it gives off a white vapour, which condenses again, without signs of crystallization, and is the Liriodendrine unaltered. But it is impossible, even with the utmost care, to effect the complete sublimation of this substance. About one-half of it remains and appears to consist of a solid resin. I could discover no trace of benzoic acid or of Ammonia in the sublimed portion, even when the temperature was raised so as to effect the decomposition of the Liriodendrine. The vapour is aromatic, and indicative of the plant.

Weak acid or alkaline solutions have no other effect upon this substance than to ascertain its complete precipitation from dilute alcohol; but the case is quite different when the Liriodendrine is exposed to these bodies in a concentrated state. Thus,

Caustic potassa or soda, dissolved in a small quantity of water and boiled with the crystals, appears to convert them into oxalic acid. In this respect Lirodendrine differs materially from the resins.

Cold concentrated sulphuric acid dissolves, and at the same time decomposes it with the greatest facility, forming a yellow or orange red solution, according to the quantity employed. Upon diluting the acid, a white matter separates.

Cold concentrated nitric acid dissolves the crystals rapidly, without the least discolouring them, and the solution is effected without the escape of any gaseous matter. The acid may be even gently evaporated, and the Liriodendrine recovered without any material alteration. Boiling the acid produces complete decomposition, and a yellow resinous matter remains.

Cold concentrated muriatic acid has little or no action; but, when heated, the Liriodendrine effervesces and assumes a deep emerald green colour. A small portion, however, seems to escape decomposition, and may be precipitated from the acid by the addition of water.

Iodine, in substance, almost immediately imparts to the crystals, a bright chrome yellow colour, and, in the end, forms an insoluble matter, which retains a grass green colour after all the excess of iodine has been removed by a gentle heat. This is, no doubt, a definite compound; for it assumes its original yellow tint when water or alcohol is added. In this state, also, the Liriodendrine is scarcely soluble in alcohol. Although the colour produced by iodine is not so intense as that resulting from the action of the same substance upon boiled starch, it appears to be no less characteristic of small quantities; for, notwithstanding the almost complete insolubility of the Liriodendrine in cold water, if a particle of the iodine be placed upon the surface of this very weak solution, it very soon becomes surrounded by an opaque yellow film. This compound is immediately decomposed by nitric acid, which liberates the iodine and dissolves the Liriodendrine.

Chlorine and bromine produced no marked effects upon this bitter principle. Both in its fused and crystallized state it is heavier than water, at the ordinary temperature; but as the fluid approaches the boiling point, it floats upon the surface.

When the crystals are thrown upon a burning coal, they melt and volatilize in an instant without undergoing combustion; but when touched by a fragment of warm spongy platinum, they become absorbed and then may be kindled by a candle; they burn with a brilliant white flame, giving much soot, like resins and oils.

When *Liriodendrine* is fused, it bears a close resemblance to a soft resin; in this state, also, it seems to be incapable of crystallizing; but its volatility, very low point of fusion, incapacity to unite without decomposition with the alkalies, extremely bitter taste, and the definite combination which it seems capable of forming with water, all exhibit a very marked difference between it and any resin with which we are acquainted. I attempted, in vain, to form a crystalline hydrate of common resin, (it always separated in transparent globules,) and, as we have no satisfactory evidence that resins ever occur crystallized, this condition of the Liriodendrine may be regarded as alone sufficiently distinctive. It is true that M. Pelletier states his having seen the balsam of copaiba in a crystalline form; but the article, besides being of a compound nature, was at least thirty years old at the time of observation.

To conclude, I may observe that the properties of *Liriodendrine* seem to place it with camphor, as a connecting link between the resins and volatile oils.—[*Journal of the Philadelphia College of Pharmacy.*

Alkaline Extract of Jalap—by E. Durand.

Dr. Reese, in his work upon costiveness, speaks highly of an alkaline extract of Jalap, prepared at the Medical Hall, 170 Picadilly, London, as the medicine which agrees best with the stomach and small intestines, and to promote fecal secretions of the colon, without irritating the rectum. He gives no recipe for the preparation of this article; but mentions only that it is obtained by gently evaporating, in a water bath, an infusion of jalap in proof spirit, with the addition of a small quantity of carbonate of potassa to prevent the separation of the resin from the gum, on the evaporation of the alcoholic menstruum.

Having been requested by several physicians to prepare some of this extract, I operated in the following way: I digested for several days, at a common temperature, two pounds of pulverized jalap in one gallon of alcohol of 22° of Baume's areometer; I strained and filtered the liquor which I evaporated slowly, in a water bath, to the consistence of a pilular extract; adding, from the beginning, small portions of carbonate of potassa, every time the resin began to separate from the liquid. The whole amount of alkali used was about twelve drachms.

I obtained thus seven ounces and a half of a beautiful extract of a reddish brown colour, possessing an alkaline taste; but none of that nauseous, irritating sensation peculiar to the powder or tincture of jalap. As the first part of this operation was made rather hastily, the action of the alcohol was not sufficiently protracted to enable me to obtain all the soluble principles of the jalap; otherwise, I doubt not, that the result would have been nearly double, for the jalap, submitted anew to the action of three quarts of alcohol, yielded a tincture nearly as strongly charged as the first.

The alkaline extracts of jalap and rhubarb may become highly interesting remedies in cases where saline purgatives and drastic or alcoholic preparations are to be avoided; it is a well known fact that resinous purgatives, united with soap or alkalies, act more gently and efficaciously, and without irritating the stomach and intestines. The soaps of aloes, scammony, jalap, &c. have of late been in great use in Europe; they are generally prepared by dissolving in alcohol one part of resin with two parts of soap and evaporating. The direct *saponification* of resin by the carbonate of potassa would have the advantage of containing more of the active principles in a given quantity than in the above soaps.

Dr. Reese administers this extract in the form of pills of three grains each, taken one, two, or three, as the case requires, every night, every other night. Dr. Horner has exhibited it with success, according to the following direction:

R. Alkaline extract of jalap,	2 drachms.
Syrup of ginger,	2 ounces.

f. sol. one spoonful at a time.

[*Journal of the Philadelphia College of Pharmacy.*

Dr. Callaghan, of Pittsburgh, on Scarlitina Auginosa.

This disease appeared in the city of Pittsburgh, in May, 1830, and continued until January. The poor suffered most. It principally attacked children from one to ten years of age. When it first appeared, the thermometer varied from 50° to 72°, "with southerly winds, and frequent showers." In some cases the symptoms were violent, *ab initio;* but in others the disease was so mild, as to require little else than the domestic prescription of families. The duration of the disease varied from five to twenty days. Many cases ended fatally on the second, third, and fourth days. In June, July, and August, the disease became more unmanageable; the thermometer ranging from 90 to 96°, "with southerly winds and dry weather." "The disease now spread over several sections of the surrounding country, but with comparative mildness. After passing the autumnal equinox, inflammation and swelling of the tonsils became more severe, and as the cold weather of the latter end of autumn set in, this symptom continued to increase." At this period many adults were attacked; they were generally under the age of thirty, and for the most part females. No fatal cases occurred among them; and the eruption, which was less distinctly marked, was most evident on the extremities. In the greater number of cases, the eruption assumed different aspects,—in some it was pupular, in others miliary, and, finally, in others red circular spots were scattered over the body, "assuming a livid appearance previous to death, and a mahogany colour afterwards." Pneumonic symptoms occurred constantly in cold weather, and many children sunk under them. But of all other causes of death, cerebral affections were the most numerous."

On the subject of the contagious or non-contagious nature of this epidemic, Dr. C. believes that it was not contagious; but engendered in, and propagated by the atmosphere, and that it was not transferred from one person to another.—[*American Jour. of Med. Scien.*

On a New Practice in Chronic Rheumatism—by T. K. Mitchell, M. D.

This practice consists in local blood-letting, over the region of the spine, from whence proceed the nerves supplying the inflamed parts. Dr. M. only recollects two cases which did not yield to this method of treatment, and those he believes were neuralgic.—[*Idem.*

Dr. Jessy Young, on Cancrum Oris.

The object of the communication is to shew the efficacy of the deuto-chloride of mercury, as a local application in this disease. He recommends the diseased parts to be touched three times a day, by means of a swab, with a solution of this preparation, varied from two to eight or ten grains to the ounce. He further states that Dr. Gideon Humphrey has followed the same practice with great success.—[*Idem.*

Hepatic and Splenic Derangement, Simulating Organic Disease of the Heart, or Aneurism of the Aorta—by I. F. Vaughan, M. D., of Wilmington, Delaware.

In July, 1824, a lady was attacked with bilious fever, of a highly inflammatory type, which yielded to the ordinary treatment. About six weeks afterwards, she was seized with a sense of suffocation, palpitation, weight and pain in the region of the heart. By blood-letting, her symptoms were palliated, but from the continuance of the palpitations, it was supposed she laboured under an organic lesion of the heart, or an aneurism of the aorta. Consequently she was bled once or twice a week, took digitalis, opium, lived low, and remained quiet. Two months after the commencement of this plan of treatment, Dr. V. was called to visit this lady, when he discovered that the liver and spleen were considerably enlarged and indurated. At his suggestion, salivation was effected, and counter irritants applied over the affected organs. The palpitation, pain, weight, and oppression suddenly ceased, and a complete restoration to health followed.—[*Idem.*

Ascites and Anasarca from Enlarged Spleen—by I. F. Vaughan, M. D.

A labourer had an enlarged and indurated spleen, with extensive ascites and anasarca. Dr. V. prescribed calomel, opium, digitalis, and squills, also frictions of mercurial ointment. In three days, ptialism was excited, and in ten, the dropsical effusion had disappeared. The condition of the spleen, however, remained unchanged. From twelve to fifty drops of the tincture of iodine, were now taken three times a day, and the following ointment rubbed over the affected parts:—R. ung. hyd. ℥ss.; hydriodt potass. ℈ij. liq. potass. gutt. vj. m.—one half to be rubbed in daily, which, together with the use of calybeates, effected a cure.—[*Idem.*

☞ The reader will observe that this number contains twelve pages over the stipulated amount.—EDITOR.

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HÆMATOMA OF THE HEAD IN NEW-BORN CHILDREN.

In the winter of 1821, when engaged in dissecting a female child, apparently about eight or ten days old, I observed on the brow, a tumor, about the size of an almond, without discoloration of the skin, and apparently distended with fluid. Being new to me, I examined it carefully, and found the investing portion of the scalp thinned; the cellular tissue thickened and condensed; the pericranium separated from the bone, less dense, but more thick than natural, vascular and villous on its internal surface, similating a fistulous membrane; a mass of semi-coagulated blood beneath the pericranium; the bone supporting the blood highly vascular, rough, and much thinned; finally, the pericranium and bone adhering firmly together, by means of vessels, around the margin of the tumor.

May 2d, 1826. Mary Thurston, aged nine years, has a flattened tumor, about half an inch in breadth, and one in length, situated transversely on the right side, near the centre of the forehead; but it is neither attended with pain, pulsation, or discoloration of the skin.

May 3d. This morning I punctured the tumor with a cataract needle, and gave vent to a drachm of florid blood.

May 7th. No bad symptoms have followed the operation; puncture healed—tumor as large as before the operation.

May 10th. No material change. Tumor again punctured, and as much blood, as on the former occasion, evacuated.

May 15th. Tumor as large as ever. Puncture repeated, and pressure applied, by means of a piece of cork, secured by adhesive straps and a roller.

May 16th. Fever; bandage removed.

R. Ol. Ricini, ʒj. st. sumend.

May 17th. Less fever.

May 18th. Perfectly tranquil, adhesive plaster and cork removed, wound united; tumor not half its original size, and, together with the surrounding parts, inflamed.

May 23d. Tumor has disappeared.

On the 19th January, 1827, I examined this infant, and found an irregular elevation, marking out the site formerly occupied by the tumor.

June 6th, 1827. James Crane, aged six weeks, died of malformation of the heart. A few days since, I was consulted by his mother respecting his disease, when, she pointed out an oval tumor, about the size of a pigeon's egg, situated on the left side of the forehead, attended with fluctuation; but without discoloration of the skin.

This morning I examined the child, and suspecting the nature of the case, I filled the arteries of the head with size injection, and when they became distended, the tumor enlarged; therefore, I had it laid open and cleansed of blood and injection. I now re-commenced forcing the syringe, and soon observed jets of the fluid, fly off in every possible direction, from the body of the bone and the internal surface of the periosteum. On carefully examining the parts afterwards, I found the bone much diminished in thickness, immediately beneath the tumor; and the periosteum which formed the investment for the blood, thick, vascular, pulpy, and closely adherent to the surrounding bone, which was thinned and irregular.

The three cases now cited, are examples of the disease so ably described by the classical and scientific Pellata (*De abscessu capitis sanguineo recens natorum.*) He thus beautifully expresses himself on this subject:—" *Infantes nonnulli recens in lucem editi ab alterutro capitis latere abscessu quodam afficiuntur, scilicet tumor molli cum aliquo fluctuationis sensu, non dolenti, cutis colore non mutato, capillimento integro, sanguinem fluidem intus continente.*"*

I believe we can no more account for this, than many other congenital diseases; however, like them we can determine the nature of the lesion, which has been succinctly and correctly described by Pellàta, in the following language:—" *Evidens est ex iis, quæ in cranio perspeximus, in hujusmodi malo exterioris tabulæ cranii partem aliquam deficere; item sanguinem, qui ex vasis diploes effunditur, sese collegire inter pericranium et tabulam interiorem (nam exterioris portio desideratur,) abscessumque, de quo diximus, gignere.*"†

In addition to this statement, I have no hesitation in asserting, that the pericranium furnishes much of the blood, contained between it and the bone; for in the case of Jane Crane it is stated, that the injection issued from the vessels of the pericranium, as well as those of the diploe of the bone, and I not only found the pericranium soft, pulpy, and vascular in this case, but also in that first related. Hence, I have ventured to designate the disease Hæmatoma; for though a cyst is not developed in the cellular tissue, as in the affection so named by pathologists, still the pericranium and bone jointly perform the office of an accidental cyst, insomuch as their vessels effuse and absorb the contained fluid.

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* Exercitations Pathologicæ, Pars. i. p. 123.

† Op. Cit. p. 125.

This tumor may be confounded with ecchymoses and sub-cutaneous nœvi; but they are nevertheless easily distinguished, Thus—

The ecchymotic tumor is large and diffused—	*The hæmatamatous tumor* is small and circumscribed—
——may be situated on any part of the head—	——has never been observed, but on the forehead—
——occurs after difficult labors—	——seldom occurs after difficult labours—
——is of a livid colour—,	——the colour of the skin is not changed—
——generally diminishes after birth.	——always increases after birth.
The sub-cutaneous nævi is capable of erection—	*The hæmatomatous tumor* is incapable of erection—
——is frequently endowed with a vibratory motion, or even pulsation—	——is free from all motion—
——can be diminished by pressure—	——cannot be lessened by pressure—
——generally gives the skin a bluish cast.	——it never gives the skin a livid hue.

If the hæmatous tumor be not large, and the infant's health good; though my experience is limited to the case above related, I conceive we are justified in forming a favorable prognosis.

With respect to the treatment of this disease, I am inclined to think, that the evacuation of the blood by a small opening, and pressure will suffice in the majority of cases. Pellata has treated such diseases successfully, by converting the tumor into an abscess, with a small seton The method which I have proposed, may be said to resemble union by the first intention; whereas, that practised by Pellata, bears a similitude to union by the second intention. I should fear much, that any attempt to cure the disease by incision, would be attended with the most dreadful consequences—inflammation of the cyst, spreading from thence extensively over the scalp, with high fever, sloughing of the wound, exhaustion, and death.—Editor.

Return of Diseases of the Eye, treated at the general Hospital, Fort Pitt, from 21st Dec. 1826 to 20th Dec. 1827.

Principal Diseases.		Remained.	Since admitted.	Total.	*Particular Affections.*		Remained.	Since admitted.	Total.
Opthalmia without purulent discharge,	one eye,	10	88	98	Opacity of Cornea, -	one eye	11	45	56
do. do. do. do.	both	17	157	174	do. do. - -	both	13	101	114
Opthalmia with purulent discharge,	one eye	4	15	19	Vascularity of Cornea,	one eye	6	27	33
do. do. do. do.	both	4	2	6	do. do. - -	both	5	67	72
Amaurosis, - - -	one eye	2	4	6	Ulcers of Cornea, -	one eye	6	14	20
do. - - - - -	both		4	4	do. do. - -	both	1	14	15
Iritis, - - - - -	one eye		3	3	Contracted pupil, - -	one eye	5	10	15
do. - - - - -	both	1	1	2	do. do. - -	both		1	1
Pterygium, - - -	one eye		1	1	Tinea palpebrarum, -	one eye			
do. - - - - -	both				do. do. - -	both		1	1
Lippitudo, - - - -	one eye		1	1	Adhesion of Iris to Cornea,	one eye	1	18	19
do. - - - - -	both		1	1	do. do. do.	both			
Opacity of Cornea, - -	one eye	3		3	Staphyloma, - -	one eye	1	4	5
do. - - - - -	both	5		5	do. - - - -	both			
Cataract, - - -	one eye	5	20	25	Granulated lids, - -	one eye	8	31	39
do. - - - - -	both		1	1	do. do. - -	both	12	78	90
Contracted pupil, - - -	one eye	2	4	6	Villous lids, - -	one eye		9	9
do. do. - - -	both	1		1	do. - - - -	both		5	5
Loss of Humors, - -	one eye	2	10	12					
do. do. - - - -	both	1		1	Total, -		69	425	494
Stophyloma, - - -	one eye	2	9	11					
Fistula Lachrymalis, - - -			2	2					
			1	1					

OPHTHALMIC REPORT.

Staff Surgeon Melin succeeded Sir Wm. Adams, in charge of the Military Ophthalmic Hospital; and in 1826, I succeeded him. At the termination of that year, I submitted a report on the cases treated from the period of my appointment, to the Army Medical Board, and the ensuing year, the following one. This report is printed in small pica. What I have added in brevier, was either embodied in my previous report; derived from four months further experience in the same Hospital; from extern military practice; (for when the diseases were chronic, or the patients not sufficiently ill for hospital, they were treated in barracks, and the number was generally greater than that of the registered hospital patients,) or from private practice, which from the situation I held, as well as its gratuitous nature, was very extensive,—the number of such patients having averaged from twenty to thirty daily, collected from distant parts of the country.

Conjunctivitis.

Conjunctivitis is the most common form of incipient ophthalmia, and luckily, when unaccompanied with purulent discharge and its concomitants, yields most readily to remedial means; but not unfrequently it co-exists with inflammation of the deeper-seated tunics, and particularly the sclerotic. This combination may be *ab initio*, or one affection may have succeeded to the other; then, the treatment becomes difficult, and the result precarious. But that we may the better comprehend such complications, as they appeared in the ophthalmic hospital, it will be necessary—first, to consider the different forms and modifications of pure acute conjunctival inflammation, without purulent discharge.

The symptoms, which are said to mark the presence of inflammation, are not always manifest in conjunctivitis; for, in the greater number of the cases, which I treated during the past year, the patients insisted, that the organ affected, was disagreeably cold; and others again, that they were free from pain. These then were variations from the usual tokens of acute disease,—circumstances, which early attracted much of my attention, and led me to seek, if the absence or presence of these symptoms, were attended with peculiar appearances, and required an appropriate line of treatment. During this investigation, which was partly successful, other facts came to light, which I shall now proceed to disclose.

1. That conjunctival ophthalmia, attended with pain, tepid, lachrymation, intolerance of light, and vivid vascularity, is increased by stimulating applications,—one time, ending in purulent ophthal-

mia, at another, in sclerotic inflammation; and that, extraction of blood, Ant. Tart. purgatives, and vesicatories, are the means to be trusted to in the acute, and stimulants in the sub-acute stage of the disease.*

Private George Rosier, æt. 22, of the 89th regiment, admitted August 4th, with pain of both eyes, intolerance of light, tepid lachrymation, and vascularity of either conjunctiva; attributed to cold.

App'r Lot. Sulph. Cupri. p. d.†
Ut'r. Fot. Tepid. ter in die.
Hb't Mist. Purg. ℥ iij.

August 6th. Symptoms increased.

Pergat.

8th. As on last report, save an increase of intolerance of light.

Om'r Lot. Sulph. Cupri.
Rept'r Mist. Purg. et Fot. Tepid.

9th. Purulent discharge. It would be useless to give a daily account of the patient from this date; suffice it to say, that so violent a form of purulent ophthalmia was produced, as to end in total loss of vision; but more of his case hereafter.

Private Joseph Walsh, æt. 25, of the 3d foot, admitted April 12th, with increased vascularity of the right conjunctiva, severe pain, intolerance of light, and tepid lachrymation, of two days standing; the consequence of cold.

Hb't Bol. Cal. et Jalap.
App'r Lot. Nit. Argent. p. d.

13th and 14th. No material change.

15th. Ditto; save increased intolerance of light.

16th. Great intolerance of light; œdema and purulent discharge.

Om'r Lot. Nit. Argent.
Arteriot ad ℥ xxxvj.

17th. Symptoms much mitigated.

Pergat.
App'r Vesicat. nuchœ.

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* The cases narrated in this report, illustrate the axioms to which they are appended.

† The different *medicamenta* are treated of particularly, in a subsequent part of this essay.

19th. No pain; but little intolerance of light, œdema or chemosis; purulent discharge much diminished. From this period he got rapidly well; and on the 10th of May, was discharged to his duty.

These two cases are good examples of purulent disease, produced by stimulating applications, in this form of ophthalmia.

Private Michael Walsh, æt. 24, of the 3d foot, admitted May 11th, with pain, profuse lachrymation, intolerance of light, and increased vascularity of the left conjunctiva, of a few day's duration; the consequence of cold.

App'r Lot. Cupri. p. d.
Hb't Mist. Purg. et Solut. Ant. Tart.

No change took place until the 15th, when the pain had increased.

17th. Ditto; also, intolerance of light.

18th. Ditto; pain dull, lachrymation much increased, œdema of the lids; a zone of vessels can be observed on the corneal border.

Arteriot ad ℥ xxx.
R. Calomelanos gr. iij.
Opii gr. $\frac{1}{4}$ ter in die.

When his mouth became sore, the disease rapidly subsided, and he was discharged to his duty on the 26th of June.

This case exhibits sclerotic disease, the consequence of stimulating applications.

Private William Dawson, æt. 39, of the 34th regiment, admitted May 27th. A few days previously was attacked with pain, heat, redness, and tepid lachrymation of the right eye; the consequence of exposure to cold.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.

30th. Symptoms increased.

Arteriot ad ℥ xxxv.

June 1st. Pain, heat, and other symptoms much mitigated.

Hb't Solut. Ant. Tart.
App'r Vesicat. nuchæ.

From this date he gradually got well, and was finally discharged for duty.

This case, though not so serious as any of the three, above related, sufficiently points out the truth of what I have advanced.

II.—That conjunctival ophthalmia, particularly in people, who have been debilitated by other disease or climate, or who have suffered from ophthalmia before, manifested by congestive varix, with rough sensations and gelid lachrymation, but free from pain and intolerance of light; is most safely and expeditiously cured by stimulating applications.

Private Edward Brannigan, æt. 24, 57th regiment, admitted September 22d, labouring under relaxation of the right conjunctiva, the vessels being livid and tortuous, with gelid lachrymation, and rough sensations; the consequence of cold on guard.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.

24th. Color of conjunctiva more vivid; some slight pain and intolerance of light.

Ut'r Fot. Tepid. ter in die.
Rep'r Lot. ut antea.

26th. Much improved.
28th. Less pain, and intolerance of light.
30th. Well.

Private Thomas Burke, æt. 18, 63d regiment, was transferred from the South Hospital, where he had been treated for fever, with slight redness of the right conjunctiva, without pain or intolerance of light; but profuse gelid lachrymation, of one day's duration, and appearing without a known cause.

The caustic was employed with much advantage, and sufficed for a rapid and perfect cure.

Private Hugh Scully, æt. 19, of the 54th regiment, admitted October 9th, with relaxation, and lividity of the right conjunctiva, gelid lachrymation, and rough sensations, of a few days' duration.

App'r Lot. Cupri. p. d.

10th. Relaxation diminished.

Pergat.

13th. Well.

Private William Cryer, æt. 40, of the 89th reg't, admitted May 22d, on his arrival from India, where he had served 16 years. A few days previously he was seized with relaxation of the right conjunctiva, without pain or intolerance of light; but, with gelid lachrymation, and rough sensations. On examination, the vessels of the conjunctiva appeared livid and tortuous, and a foul ash-colored ulcer was apparent near the corneal border, on the inner side of the eye. It would be loss of time to pursue the subsequent reports made on this patient in the register; it being sufficient to add, that the caustic solution was used daily, and that a pencil of this substance was once applied to the ulcer. Under this treatment he soon got well.

III.—That, when the conjunctiva is relaxed with gelid lachrymation, but, without intolerance of light; pain in the brow, provided there be none in the globe, does not prohibit the use of stimulants, which appear as well adapted to this form, as that described in section II.

Private John Conway, 39th reg't, æt. 21, admitted March 6th, with darting pain in right eye-brow and temple, attended with gelid lachrymation, and slight congestive varix of the right conjunctiva, without intolerance of light; of three days' duration, and attributed to cold.

App'r Lot. Nit. Argent. p. d.

11th. Discharged for duty.

IV.—That warm lachrymation frequently co-exists with relaxation of the conjunctiva, and when unattended with pain or intolerance of light, does not forbid the use of stimulants.

Private James Conroy, æt. 28, 47th regiment, admitted March 11th, labouring under livid relaxation of either conjunctiva, with profuse tepid lachrymation, unattended with pain or intolerance of light; of eight days' duration, and attributed to severe night-guards, at Tilbury Fort. Had a similar affection heretofore.

Hb't Bol. Calomel. et Jalap.

App'r Lot. Cupri p. d.

16th. Well.

Private Charles Purcell, æt. 24, 39th regiment, admitted March 22d, with slightly increased lachrymation (tepid) and vascularity of both conjunctiva, attended with rough sensations, but without pain or intolerance of light; of three days' duration, and arising without a known cause.

App'r Lot. Nit. Argent. p. d.
Hb't Bol. Calomel. et Jalap.

27th. Well.

Private Henry Murray, æt. 22, 63d regiment, admitted April 5th, with œdema of the upper lid of right eye, congestive varix of both conjunctiva, rough sensations, and tepid lachrymation; but without pain, or intolerance of light. Can assign no cause for the attack. Had ophthalmia six months since.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.

6th. Less lividity and tortuosity of the vessels, slight pain, incipient intolerance of light, and rather diminished lachrymation.

Pergat.
Ut'r. Fot. Tepid. ter in die.

It is sufficient to say, that from this date the cure was rapid.

V.—That heat, intolerance of light, tepid lachrymation, and vivid conjunctival congestion, even though there be no pain, are increased by stimulating applications, and require for their removal the same treatment as the species described in section 1.

Private John Byrne, æt. 24, of the 46th regiment, admitted July 23d, with increased vascularity of the right conjunctiva, attended with heat, intolerance of light, and tepid lachrymation, without pain; of three days' standing, and produced by cold.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.
Ut'r Fot. Tepid. ter in die.

From this date until the 30th, no material change took place. At this period he complained of lancinating pains, and on the 2d August there was great œdema and chemosis, with purulent discharge, and much pain on pressure.

Arteriot ad ℥ xxx.
Hb't Solut. Ant. Tart.

3d. All symptoms mitigated.

App'r Vesicat. Nuchæ.

By the 10th, the purulent discharge had subsided, as well as the chemosis and œdema; and on the 24th, he was reported well.

So much for pure conjunctivitis. I shall now consider, after the same manner, acute conjunctival ophthalmia, with purulent discharge.

I.—That when the discharge is bland and cream-coloured, attended with soft œdema and gelid sensations, the disease not being specific, particularly in those who have suffered from ophthalmia before, or are relaxed by age, climate, disease, or other causes; the caustic solution is sufficient for a safe and speedy cure.

Private Michael Mannix, 4th Lt. Dgs., æt. 41, arrived from India, invalided for deafness, for which he was treated in Fort Pitt Hospital. Was transferred from thence, on this, the 30th June, with œdema and chemosis of the right eye, attended with a white and bland purulent discharge, but without pain, heat, or intolerance of light.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.

July 1st. Œdema and purulent discharge diminished.

2d. Complains of some pain, and intolerance of light, appearances improved.

Ut'r. Fot. Tepid.
Pergat.

4th. The above symptoms have almost subsided.

6th. Right eye nearly well; left, slightly affected. It would be useless to pursue this case further; suffice it to say, that the left was affected after the same manner as the right eye, and the caustic lotion served for a perfect cure.

II. That where there is profuse purulent discharge, with chemosis, firm œdema, great heat, intolerance of light, and severe pain, not only of the organ affected, but also of the brow and temple, produced suddenly, by cold and wet; depletion, if the patient can bear it, and salivation, have appeared to me, the most effectual means of relief.

Private James Johnson, æt. 28, R. A. C.—invalided for remittent fever, admitted September 22d, labouring under profuse purulent discharge from both eyes, with chemosis, firm œdema, great heat, dreadful pain in the eyes and forehead, severe intolerance of light, and general excitement; the consequence of cold and wet.

R. Calomelanos gr. v.
Pulv. Opii. gr. ½ quartis horis.

24th. Mouth sore; the above symptoms greatly mitigated.
October 5th. No pain, heat, œdema, or intolerance of light.
10th. Well.

III. That purulent ophthalmia is, at times, manifestly secondary to sclerotic inflammation, and that such cases are to be treated, if the patient's strength will admit of it, by full bleeding from the temple, and in every case with mercury.

Private Patrick M'Cabe, æt. 30, 49th regt., admitted September 13th, with opacity of the right cornea, and slightly granulated lids, the consequence of acute ophthalmia, contracted at the Cape, fourteen months previously. For this affection a solution of Sulph. Cupri was applied; under which treatment he was rapidly mending, when on the morning of the 10th of October, a zone of vessels surrounded each cornea, attended with severe pain, intolerance of light, tepid lachrymation, and general excitement.

Arteriot. ad ℥ xxv.
Hb't. Bol. Calomel. et Jalap.
Ut'r. Fot. Tepid.

11th. Above symptoms increased, with œdema, chemosis, and purulent discharge.

R. Submur Hyd. gr. v.
Pulv. Opii. gr. ss.
4'tis horis.

13th. Mouth sore, less pain, heat, chemosis, and purulent discharge; no intolerance of light.
20th. Well.

IV. That purulent ophthalmia can be produced by any thing there described; capable of increasing vascular action to a high pitch, and that this affection is best cured by the plan of treatment laid down in section 1, of simple pure conjunctivitis. In the section, now alluded to, I have given examples of its production by stimulating applications intended to relieve this disease; I shall here add another case to the same effect,—two as examples of neglected acute ophthalmia, rendered purulent therefrom,—and three, produced by the introduction of foreign matter.

Private Michael M'Carthy, æt. 40, 36th regt., admitted February 7th, labours under high vascularity of either conjunctiva, with pain, heat, tepid lachrymation, intolerance of light, and constitutional fever; of three days' duration, induced by cold.

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* In very severe cases, salivation may be necessary, as in that of Lindsay, to be related presently.

App'r Lot. Nit. Argent. p. d.
Hb't. Mist. Purg.

8th. Great chemosis with purulent discharge, other symptoms increased.

Vs. ad ℥ xxxvi.
Hb't Solut. Ant. Tart.
App'r Vesicat. nuchæ.

By this treatment, the œdema, chemosis, and purulent discharge, ceased; but it was only after some time that he completely recovered.

Private Cornelius Keogh, æt. 26, 67th regt., admitted February 6th; some days since, came to Chatham on furlough. On his way hither ten days ago, was affected with inflammation of the right eye. He now labours under œdema of the lids, chemosis of the conjunctiva, interlaminar suppuration of the upper segment of the cornea, profuse purulent discharge, of a greenish yellow colour, great heat, intolerance of light, and pain, which is particularly severe at night.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.

7th. All the symptoms increased.

Vs. ad ℥ xxx.
Hb't Solut. Ant. Tart.

By this plan of treatment, the œdema, chemosis, purulent discharge, and acute symptoms were removed; but more of his case in a subsequent section of this report.

Private Matthew Lindsay, a married man, æt. 26, 1st foot, admitted October 21st; for a month has had more or less inflammation of his right eye, which for the last six days has been in a dreadful state. Now, he is affected with pain of eye and forehead; burning heat of the former; and when the lids are separated to a small extent, great intolerance of light; firm and dark coloured œdema, the conjunctiva being like unto liver, from effused blood; excessive purulent discharge, of a brownish yellow colour and unequal consistence, excoriating the cheek, with high fever.

Arteriot ad ℥ xxxviij.
R. Calomelanos, gr. iv.
Pulv. Opii gr. ss. quartis horis.

Suffice it now to say, that the bleeding gave much relief to his suffering; but before he became salivated the cornea sloughed. More of his case in another place.

Private Patrick Phelan, æt. 20, 3d foot, admitted October 4th, has œdema and chemosis of the right eye, with deep abrasion of the conjunctiva between the globe and lower lid, attended with pain, heat, intolerance of light, and purulent discharge, of one day's duration; the consequence, he says, of the sting of an insect, whilst on guard. I fear his disease was wilfully produced, by the introduction of some acrid matter.

Arteriot. ad ℥ xxxvi.
Hb't Bol. Calomel. et Jalap. et
Solut. Ant. Tart.

Under this treatment he rapidly improved, and on the 20th was noted well.

Private John Gilmore, æt. 24, 63d regt., admitted March 4th, with œdema, chemosis of right eye, deep abrasion and sloughing of many parts of the conjunctiva, purulent discharge, heat, and intolerance of light—pupil contracted. Some fever.*

App'r Lot. Nit. Argent. p. d.
Hb't Bol. Calomel et Jalap.

This treatment I pursued in Fort Pitt hospital, where he was admitted for catarrh; but on the 4th, the other symptoms continuing, and the lower segment of the cornea getting dusky, the following course was adopted.

Arteriot: ad ℥ xxxvi.
Hb't Ant. Tart. Solut.
Ut'r Fot. Tepid.

The œdema, chemosis, and purulent discharge, now got well; but there is other useful matter connected with his case, which shall be related in its proper place.

Private Matthew Byrne, æt. 24, 47th regt., admitted June 14th, has excessive purulent discharge from right eye, with great œdema and chemosis, the conjunctiva appears abraded and sloughy in many parts,* attended with intolerance of light, heat, and pain.

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* No doubt produced wilfully by the introduction of some foreign substance; for I found a white powder, supposed to be pounded glass, concealed under the head of his bed.

Arteriot ad ℥ xl.
Hb't Bol. Calomel. et Jalap et.
Solut. Ant. Tart.

Under this method of treatment, he finally got well, previous to which a small portion of the cornea became absorbed,—to be particularly spoken of in a subsequent part of this report.

V. That in purulent ophthalmia, though the discharge be bland and white, and the patient advanced in years, and may have suffered from opthalmia before; still, if there be pain, heat, and intolerance of light, stimulants are insufficient for a cure.

Private Thomas Truel, æt. 50, transferred from Fort Clarence Lunatic Hospital, on the 22d of June, with purulent ophthalmia of right eye, for which no cause can be assigned; has had ophthalmia three times, once in India, eight years since. At present he labours under great chemosis and œdema, with bland purulent discharge, pain, heat, and intolerance of light.

Hb't Mist. Purg.
App'r Lot. Nit. Argent. p. d.

On the 20th, the lower half of the cornea became opaque, and soon sloughed; less of humors followed, and he was finally discharged with total loss of vision, in this organ.

VI. That purulent ophthalmia will arise in many cases, after the cessation of a gonorrhæal discharge; that stimulating the urethra is useless; that stimulants to the eye are ineffectual; that depletion of itself, as laid down in some other sections of this report, will of itself generally fail; and that mercury has proved, in my hands, the most successful remedy.

Private James Trance, æt. 18, 63d regt., was admitted into the South Hospital on the 15th of April, with gonorrhæa, and was transferred to the Opthalmic Hospital, on the 19th of April, with profuse purulent discharge from the right eye, great œdema and chemosis, attended with pain, great heat, and intolerance of light. These symptoms took place three days before his transfer, and succeeded to a suppression of the urethral discharge. Before he came under my care, he had been freely bled, purged, and blistered on the nape of the neck; after his admission, a bougie was introduced into the urethra, besmeared with Ung. Hyd. Nit., as also red precipitate, and cataplasms and fomentations were applied to the perineum. He was bled from the temple to fainting—the blister to the neck repeated, and nauseated with Tart. Ant.; but on the fourth day the cornea sloughed, and the humours were consequently prolapsed. The urethral discharge never returned.

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* Evidently produced by some irritating substance, which is still further strengthened by a note from Captain French, commanding the depot, stating, that this man was heard to say, he would use means to evade embarkation for India, on the 15th.

Private John Rainbow, æt. 18, 40th regt., on the 29th of June, was admitted into the South Hospital, with gonorrhæa of a few days' standing. On the 7th of July, he was transferred to the Opthalmic Hospital, with purulent opthalmia of right eye, of one day's duration. On admission, the urethral excretion had ceased; but he insisted that there was a purulent discharge from the eye, before that from the urethra disappeared. He had livid œdema of the lids, with great chemosis, and ichorous discharge, attended with pain of the eyebrow and temple, also great heat.

The urethra was stimulated as in the former case, he was well purged, and a solution of the Sulph. Cupri. dropped into the eye. However, on the following day the cornea sloughed, and he was finally discharged with loss of vision.

Private John Finlay, æt. 20, N. F. L. C., admitted July 15th; four days ago was attacked with gonorrhœa; yesterday the discharge from the urethra began to cease; in the evening the right eye felt uneasy; in the morning of this day, the lids suddenly became chemosed; the eyes, forehead, and temples, highly painful; and at eight, A. M., there was much purulent discharge. It is now one o'clock, and these symptoms are much increased, with scarcely any discharge from the urethra.

Arteriot ad ℥ xxx.
℞. Submur. Hydrarg. gr. v.
Pulv. Opii. gr. *ss.*
Quartis horis.

Only two ounces of blood were drawn, when syncope took place.

16th. Some slight discharge continues from the urethra, other symptoms as on last report.

17th. Mouth touched; less discharge, matter white and thick; less pain, heat, and œdema; cornea muddy, but no apparent tendency to slough; urethra discharging freely. It would be useless to pursue this case further; suffice it to say, that he got quite well, and was discharged for duty.

Private John Duffy, æt. 22, of the 1st foot, was admitted into the South Hospital on the 22d of September, with gonorrhœa of three days' standing. On the night of the 23d of October, the discharge from the urethra ceased, and, on the following day, he became affected with purulent ophthalmia of his right eye, as manifested by pain, intolerance of light, chemosis, œdema, and purulent discharge. He was freely bled from the arm, leeched on the temple, and put under the influence of mercury. On the 27th, his mouth became affected, and all the symptoms gradually subsided. As the œdema and chemosis went down, the discharge became more white and bland, and lost its power of excoriating the cheek; however, that from the urethra never returned. He was discharged for duty on the 30th November.

VII.—That in patients who have had gonorrhœa for more than fourteen days, a form of purulent ophthalmia sometimes takes place, manifested by slight puriforme discharge, œdema, and chemosis,* with slight pain, itchiness, and intolerance of light, the discharge from the urethra not decreasing; which is best treated by purgatives, stimulants, and fomentations.

Private Jno. Grindly, æt. 20, of the 54th Regiment, transferred October 13th, from the South Hospital, where he has been treated for gonorrhœa of 18 days' duration. Yesterday, he was attacked with roughness, amounting in the evening to slight pain in the right eye, with great intolerance of light, œdema of the upper lid, tepid lachrymation, muco-purulent discharge, and a stellated condition of the conjunctiva, without any change in the state of the urethral discharge.

Hb't Mist. Purg.
App'r Lot. Cupri. p. d.
Ut'r Fot. Tepid. ter in die.

On the 20th of the month, he was reported well, and finally went to his duty.

A similar case occurred in one of our medical offices, and soon yielded to the same treatment.

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* Before the latter appearance becomes too great, the conjunctiva has a stellated appearance, the effect of aborescent vessels.

I.—Men of phlegmatic temperaments presented themselves, with relaxation and fullness of the conjunctival vessels, slightly increased sebaceous and lachrymal secretions, the latter being cold, the tongue dry, and the stomach sick. Such cases yielded to emetics, followed by purgatives. Indeed, the operation of emetics seemed most manifest in this form of disease.—(*From the fifth section of my Report for* 1826.)

II.—In impure ophthalmia, when the discharge is green, cornea hazy, chemosis moderate, without pain or gelid sensations in the organ affected; the solution of caustic is the most efficient remedy, and bleeding, &c. never fails to aggravate the disease.

November 6th, 1826.—Mark Dyson, æt. 74, very infirm, labours under purulent ophthalmia of the right eye; the discharge is abundant, green, and thin; chemosis inconsiderable, cornea hazy, attended with unpleasant gelid sensations.

App'r Lot. Nit. p. d.

10th. Chemosis and purulent discharge have nearly subsided; gelid sensations are no longer felt; cornea less hazy.

Pergat.

20th. Well.

September 13th, 1826.—Pensioner Joseph Hartshorn, æt. 53, of full habit, has had the Egyptian ophthalmia. From the conspiration of wet feet, exposure to the night air, and a drunkenness of three days, was attacked one week since with inflammation of both eyes. At present there is an abundant greenish purulent discharge from both eyes, with some chemosis and haziness of both cornea. His cheeks are excoriated by the discharge, and he only complains of rough and gelid sensations.

V. S. ad ℥ xxx.
Hb't Mist. Purg. et
Ant. Tart. Solut.
App'r Vesicat. nuchæ.

15th. All symptoms increased; cornea of right eye has sloughed at its inferior part.

Om'r. Med.
App'r Lot. Nit. Argent. p. d.

Under the use of this lotion, the left eye soon recovered; but he lost the right, the humours being prolapsed through the breach of the cornea, which occurred under the use of the antiphlagistic treatment.

III.—That, in new-born infants, when the conjunctiva is villous, the integuments of the lids pliant; the discharge bland, copious, and streaked with blood, or preceded by slight hermorrhage; caustic is the best remedy:—the cornea sloughs under the use of leeches, and emolient applications.

January 7th, 1827.—Hannah Hughes, æt. 6 days, has a bland puriform discharge, streaked with blood, from both eyes; the integuments of the lids are soft and yielding, and the conjunctiva villous.

App'r Lot. Nit. Argent. p. d.

16th. Perfectly well.

September 3d, 1826.—Henry Martin, æt. 11 days, labors under impure ophthalmia; the discharge is thick, copious, and slightly tinged with blood; the conjunctiva is villous, and the palpebral integuments natural.

App'r Hirudines. ii. p. d.
App'r Vesicat. Nuchæ.
R. Ol. Ricin. ℈ ij.
Ut'r Fot. Tepid. 2nda qq. hora.

Symptoms increased.

Rep'r Hirudines.

6th. Left cornea has sloughed; right, very hazy.

App'r Lot. Nit. Argent. p. d.

20th. Right eye healed.

III.—That, in infants of a more advanced age, when there is great spasm of the orbicularis, plaited conjunctiva, and profuse greenish discharge; leeches to the mucous membrane of the nose, blisters to the nape of the neck, and ablutions of tepid milk and water, should be employed, together with purgatives; and then the caustic solution, which, if used in the first instance, never fails to aggravate the disease.

October 19th, 1826.—Mrs. Harrison has sent her twin-daughters, Mary and Jane, to me. They are 15 days old, and labour under purulent ophthalmia,—in all probability the consequence of a maternal leucorrhœa. In both, the disease presents exactly the same appearance,—that is, the conjunctiva is swollen and plaited; the orbicularis causes ectropion on the slightest attempt to open the eye, and the discharge is profuse, green, and thin.

Mary . . . App'r Hirudines. iij naso.
R. Ol. Ricini, ℈ ij.
Ut'r Fot. Tepid.
App'r Vesicat. Nuchæ.
Jane . . . App'r Lot. Nit. Argent. p. d.

21st. Mary is better; Jane is worse.

Pergat.

22d. Mary is much better, the spasm of the orbicularis, swelling, and discharge being less.—Jane is worse; the swelling, discharge, and spasm of the lids having increased.

Mary . . . App'r Lot. Nit. Argent. p. d.
Jane . . . App'r Hirudines, ii naso.
R. Ol. Ricini, ℈ ij.
Ut'r Fot. Tepid.
App'r Vesicat. Nuchæ.

24th. Mary is nearly well. The symptoms of Jane are so far mitigated, as to enable me to see the corneæ; both of which have sloughed in several points, and from the appearance of the sloughs, the devastation must have taken place before the antiphlagistic treatment was commenced.

Suffice it now to say, that Mary soon recovered perfectly; and Jane, only after a long time, and then with disfigured corneæ, synechia posterior, displaced pupils, and consequently very imperfect vision.

V.—That, in infants, when the purulent discharge is moderate, of a yellowish green cast, the globe of the eye more diseased than the lids, and the cornea ulcerated; the disease is best treated with the extract of bark, and the instillation of the caustic lotion.

August 18th, 1826.—Thomas Dixon, a puny child, æt. 3 weeks and 4 days, has had ophthalmia for a fortnight, attributed to exposure to light. There is a scanty purulent discharge, villosity of the conjunctiva, and several superficial ulcers on the cornea of both eyes.

R. Ext; Cinchon: gr. ij. ter in die.
App'r Lot. Nit. Argent. p. d.

25th. Much improved.

September 1st. Well. Both corneæ opaque in the site of the ulcers.

August 18th, 1826.—Margaret Jackson, æt. 5 weeks, eight or ten days since, was seized with inflammation of both eyes, in consequence of her mother having incautiously carried her by a group of chalk hills, during the vehemence of the sun. At present there is a greenish yellow discharge from both eyes; the corneæ are sloughy in several points; and the conjunctiva is villous.

App'r Hirudines, iij naso.
Ut'r Fot. Tepid.
R. Ol. Ricini, ℈ ij.
App'r Vesicat. nuchæ.

20th. Worse.

Pergat.

22d. A segment of the right cornea has sloughed, and a portion of the iris is prolapsed.

App'r Lot. Nit. Argent. p. d.
R. Extract. Cinchon. gr. ij. ter in die.

The amendment was visible from the commencement of this plan of treatment, and in a short time the child recovered; but not without considerable deformity, as may be easily conceived from the facts above mentioned.

VI.—That, when the conjunctiva is moderately swollen and vascular, with a mucous discharge, without pain or intolerance of light; but with more or less fever, and a similar defluxion from the lungs and nose; revulsion is the safest and best method of cure—purgatives and stimulating pediluvia.

Miss K., whom I had bled, and to whose conjunctiva I had leeches applied, for a disease of the character, now mentioned, required the instillation of the liquor plumbi, to remove the relaxation that remained, after the other defluxions had subsided.

Lieutenant P——, who laboured under this form of ophthalmia, and had the caustic solution applied by my directions, required its continuance for ten or fifteen days after his catarrh and fever subsided.

VII.—That, when in crowded, wet, and impure dwellings, the edges of the tarsi become red, swollen, itchy, and dry, and in a short time are bedewed with a muco-sebaceous matter; without intolerance of light, or tepid and profuse lachrymation. No further treatment is necessary, than the removal of the exciting cause, a purge, abstinence, cleanliness, and tepid fomentations.

VIII.—That, when the disease, mentioned in the last section, (VII.) occurs in weakly and scrofulous children, it extends to the conjunctiva of the globe, and the cornea soon becomes ulcerated; then, change of habitation, the exhibition of the extract of bark, and the instillation of the caustic solution, become necessary.

[The two last sections were deduced from the observation and treatment, principally of the children of invalid soldiers, dwelling in Fort Pitt Barracks,—a building situated on the side of a hill, and, for the most part, beneath the surface of the earth; constantly crammed with drunken invalids, their filthy wives, and neglected children.]

IX.—That, when the under lid appears red, with itchiness, or a sensation, as if the eye contained sand, slight lachrymation, and glutinous adhesion of the eyelids after sleep, but without intolerance of light; the caustic solution, in nine cases out of ten, stops the progress of the disease. But when this stage has passed, and it presents the characters, mentioned in Sections I. and II., page 119, of this report, as it generally does; the practice thore mentioned should be pursued.

[This, perhaps, is one of the most important sections in the report, and there is none better based; for, during the period I was engaged in this investigation, I had almost daily opportunities of testing its validity. It constituted the second section on ophthalmia, of my Report for 1826. Then, I did not speak so decidedly as I have now done; because further observation has extended my knowledge, and consequently given me more confidence.]

X.—It was my intention to have introduced four more sections, tending to prove,—That the purulent disease, is only communicated by contact. That, from whatever cause it is produced, it is capable of producing its like. That the matter, taken from the urethra, is all-sufficient to create the disease in the eyes of the same individual; and that metastasis does take place. But I shall omit them in this place, as I purpose at another time, to treat of them in an *Essay on Malingering*.

Having said so much concerning conjunctival ophthalmia, I shall now proceed to a similar consideration of sclerotic inflammation.

I.—That sclerotic disease is not unfrequently produced by stimulating applications used for the cure of conjunctivitis,—this conclusion may be drawn from the general tenor of the preceding part of this report.

Private George Westley, 14th Reg't, æt. 37, admitted February 9th, with conjunctival relaxation, the consequence of cold, without pain, heat, or intolerance of light.

App'r Lot. Nit. Argent. p. d.

10th. Intolerance of light, but no pain; some sclerotic vascularity.

Pergat.

Ut'r Fot. Tepid. ter in die.

Hb't Mist. Purg.

No material change took place until the 15th, when from the urgency of the symptoms of sclerotic inflammation, it was supposed necessary to administer calomel to salivation; after which, he soon got well, and was discharged to his depot, II.—That young persons, of scrofulous habits, who have suffered from a combination of conjunctival and sclerotic disease, are particularly liable to have a return of both complaints. In such relapses, the patient does not complain of pain, but intolerance of light, and gelid lachrymation. That stimulants, though combined with purgatives and fomentations, are hurtful; and that mercury is the safest means of cure. Westly's case, just now related, is partly corroborative of this fact, for he had been discharged from hospital on the 19th of January, where he had been treated for a similar affection.

III.—That there is a form of disease which much resembles that last stated, save that it appears sooner after the subsidence of the first attack, and sets in with more marked appearances. It also occurs in young persons, of a scrofulous habit, and the conjunctiva is affected as in the former case; but the zone of vessels which encircles the cornea is more distinct. The cornea is also sooner affected; it becomes generally muddy, apparently from effusion beneath its conjunctival layer. In the former species, it was stated that the lachrymation was cold; but in this, though cold in the commencement, it is scanty, and soon becomes profuse and tepid; this change keeps pace with the progress of its intensity. In the former there is no pain, but in this, the commencement of the attack is attended with rough sensations, which, in a short time, are changed for pricking pains. At this period, specks form on the cornea, the deposition being white, and situated beneath the conjunctival layer. Finally, that stimulating applications contract the conjunctival vessels, but also increase the sclerotic disease; and that mercury is the remedy to be depended on.

Private Joseph Jennings, æt. 19; a scrofulous looking boy of the 54th Reg't, was discharged from hospital on the 20th February, where he had been treated for conjunctival and sclerotic inflammation,—re-admitted on the 26th of the month, with pricking pain in the globe of his right eye, tepid lachrymation and intolerance of light, relaxation and lividity of the conjunctival vessels, and a zone of mall, and red trunks round the corneal border. The cornea itself, throughout, is dim, and a white deposit exists beneath the conjunctiva, below and to the inner side of the axis of vision.

Hb't Bol. Calomel. et Jalap.
App'r Lot. Nit. Argent. p. d.

The caustic solution produced great pain, diminished the size of the conjunctival vessels, and caused their lividity to disappear. However,

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* When the disease commenced the tears felt cold.

two more specks forming in the axis of vision, and nocturnal pains setting in; on the 28th, he was put on mercury. In two days, his mouth became affected, the disease suspended, and on the 4th of March, he was reported well.

IV.—That sclerotic inflammation often follows the too quick application of stimulants, used for the cure of conjunctival relaxation, after the cessation of purulent ophthalmia, as proved by the subsequent part of the cases of Keogh and Gilmore, related in pages 121, 122.

In Keogh's case, a solution of the Sulph. Cupri was applied on the 10th February, for the cure of relaxation of the conjunctiva; but on the 22d, the cornea had become muddy, with vessels encroaching its upper part, attended with great intolerance of light and pain; so that it was necessary to exhibit mercury for his relief. In two days his mouth became affected, upon which event, the symptoms of sclerotic disease soon subsided, and he was finally discharged to his Regiment.

In Gilmore's case, the sulphate of copper in solution, was applied on the 5th March; the purulent discharge, œdema, chemosis, pain, and intolerance of light having subsided. But on the 7th, the intolerance of light returned with great severity, attended with the usual symptoms of sclerotic inflammation, so that it was found necessary to discontinue the stimulant, and exhibit mercury to salivation. When his mouth became touched, the inflammation rapidly subsided, and he was soon discharged to his depot.

V.—That when acute sclerotic inflammation is produced in old and relaxed persons, intolerance of light is the most prominent symptom; for there is a sensation of cold rather than heat, and profuse gelid lachrymation, with dull instead of lancinating pains in the globe. Mercury, in such cases, is sufficient for the cure, without depletion.

Private Thomas Baldwin, æt. 28, 41st regiment, admitted May 23d, on his arrival from India, where he was invalided for visceral disease. Seven days before his admission whilst on board ship, became affected with inflammation of the right eye, in consequence of cold upon the arrival of the ship in the channel. On admission he had great intolerance of light, and dull pain in the right eye, with gelid lachrymation, and a zone of vessels surrounding the cornea. He was immediately put on the use of mercury, and in three days he became salivated; upon which the symptoms rapidly subsided, and on 26th of June, he was discharged the hospital.

VI.—That when symptoms of acute sclerotic inflammation succeed to protracted rheumatism, mercury of itself, is a certain means of relief.

Private William M'Namara, æt. 18, 39th regiment, was transferred from Fort Pitt Hospital on the 14th of June, much debilitated by previous treatment for rheumatism, and labouring under high sclerotic inflammation of his left eye, as manifested by a zone of minute vessels surrounding the cornea, (which from internal distention appeared muddy) great heat, pain, and severe intolerance of light, with profuse tepid lachrymation. Mercury was immediately exhibited, and in two days he became salivated; upon which the inflammation rapidly declined, and he was soon discharged to his duty.

VII.—That a form of subacute sclerotic inflammation is produced by cold and damp; which in the commencement is not attended with symptoms sufficiently severe to render the soldier unfit for duty. That ulceration takes place near the corneal border, subsequent to which the conjunctiva becomes relaxed, and a bunch of of vessels traverses the corneal boundary, and proceeds to organize the lymph deposited to repair the breach.* That caustic at once proves the existence of the true inflammation, by creating acute symptoms. And finally, that mercury is sufficient for a cure.

Private David Williams, æt. 27, 54th regiment, admitted July 29th, arrived from Tilbury Fort, having a hazy ulcer on the outer border of the left cornea, with a bunch of red vessels leading to it, the corneal edge being surrounded by a very minute zone of red trunks. He states that the disease has been of one month's standing, nevertheless, that he continued to do his duty—can assign no cause for his complaint save severe night duty.

App'r Lot. Nit. Argent. p. d.
Hb't Mist. Purg.
Ut'r Fot. Tepid.

August 1st. Severe pain, heat, and intolerance of light; zone of vessels much increased.

Om'r. Lot.
R. Calomel. gr. iij.
1 Opii. gr. $\frac{1}{4}$.
3 tiis. horis.

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* The symptoms are actually so obscure, that only for the appearance of the corneal disease, the sclerotic inflammation would escape notice.

3d. Mouth sore, inflammation suspended.
17th. Discharged fit for duty.

VIII.—That purulent ophthalmia, often succeeds rapidly to sclerotic inflammation. See M'Cabes case mentioned in page 120.

IX.—That when sclerotic inflammation is suddenly augmented in old corneal disease, where there has been loss of substance, the symptoms are very acute, the conjunctiva becomes red and villous, and the opacity of the cornea staplylomatous. In this case mercury is unnecessary, as saving the eye is not our object; and immediate relief is afforded by division of the tumor. If this be not practised, suppurative inflammation will take place, and not only protract the cure, but also increase the suffering of the patient, and produce much more deformity than if the section had early been practised.

Private John Tremlet, æt. 32, 64th regiment, had complete opacity of the upper half of the right cornea, produced by sloughing, the consequence of purulent ophthalmia at Gibraltar. On the 10th September he was exposed to cold and wet, to which succeeded high inflammation, as manifested by great pain, villosity and vascularity of the conjunctiva, as also a staphylomatous condition of the diseased segment of the cornea. I made a section of the tumor, evacuated the turbid aqueous humour, and extracted the lens, which was displaced and lay close behind the projecting cornea. The symptoms of acute disease now subsided, and he was soon discharged from hospital, without other treatment, than purgatives and fomentations.

Private Michael Malone, æt. 23, 67th regiment, had opacity of the right cornea, the consequence of purulent ophthalmia, for which he was sent from his regiment to Chatham, to be discharged from the service; but whilst on his march hither (from Northampton) was attacked with acute inflammation, which ended in total staphyloma, and suppuration of the interior of the globe, attended with the most excruciating symptoms. In this state I found him on admission, when, I immediately passed a cataract-knife through the centre of the protruding cornea, and divided it from side to side; thus giving exit to much thick and yellow matter. The wound discharged well, and soon healed, the globe having shrunk to the back of the orbit.

1. That sclerotic, when combined with conjunctival hyperemia, sometimes assumes an intermittent character; and that it is easily and expeditiously cured by the Sulph. Quininæ.

December 9th, 1826—John Meigs, æt. 16, residing on the banks of the Medway, has sclerotic and conjunctival turgescence of both eyes, with pain and intolerance of light; of three weeks' duration. He informs me, that he has had repeated attacks of ague, and that the affection of his eyes is intermittent—occurring on the tertian period.

11th. I examined this boy yesterday, when there was not the least appearance of disease; however, this morning, it returned at the usual period.

Hb't Sulph. Quininæ, gr. v.
ter in die.

His disease did not return.

March 4th, 1827. Sarah Westall, æt. 18, resides in a marshy district of Kent, has had two attacks of intermittent fever. Now she labours under congestion of the sclerotic and conjunctival tunics, which she asserts comes on daily at noon, and lasts for six hours; being accompanied with severe lancinating pain, great intolerance of light, and profuse tepid lachrymation; all of which subside together with the congestion, leaving an interval of nearly eighteen hours, in which she affirms, that she suffers no inconvenience. This affection commenced ten days since.

7th. I have satisfied myself of the intermittent character of this woman's ophthalmia.

R. Sulph. Quininæ. ʒ j.
Aq. Piuræ, ℥ vi.
Acidi Sulph. Dilut. ʒ j.
F. M. de qua capiat cach ij. mag. 3tia qq. hora.

The disease yielded to this treatment.

[*To be continued.*]

DR. LEWIS FEUCHTWANGER ON THE TINCTURE OF BARK.

When it was announced, last year, that Dr. Serturner* had discovered a new alkaline principle in Peruvian bark, which he called Chinioidine, the properties of which were said to be far superior to those already known from any preparation of the same substance, inasmuch as none of the usual inconveniences succeeded its exhibition. All the European medical world hailed the discoverer with the greatest enthusiasm, as one who still maintained the claims of the cinchona to be called the great arcanum against the ravages of fever. But since this new alkali has fallen into disrepute, physicians are, in intermitting fevers, again compelled to resort to the sulphate of quinine, the beneficial properties of which are invaluable; but whose exhibition has, in a number of well-authenticated cases, been followed by the most lamentable consequences, sometimes even by death itself. The most common sequelæ are pain and oppression in the abdominal region, indigestion, loss of appetite, œdema of the extremities, ascites, dyspnæa, spitting of blood, anxiety, more or less remitting fever, with great general prostration of strength. All these consequences have recently been observed in this city by a friend of mine, an eminent and scientific physician. I could myself cite six cases, in which I have seen great œdema of the feet succeed to the long-continued use of the quinine.

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* The discoverer of Morphine.

Among all the preparations of the cinchona, which have for many years been in use, but which have been almost discarded from practice, since the discovery of the quinine; the simple tincture is the most neglected and the least deserved so, as by examining its constituents we shall abundantly prove. The only parts of the Peruvian bark taken up by the alkohol, are the cinchonine and quinine, or both together; and in its administration, we are sure of giving nothing but its active principle. The tincture of bark contains the quinine or cinchonine salts, a very little colouring matter and fatty substance, without any kinate of lime, gum, or starch. Its efficacy, therefore, in a great measure, depends upon its being prepared with strong alkohol. This, however, is not ordered in the formulæ given in our pharmacopœias and dispensatories, which direct diluted alkohol or proof spirit in its preparation; and many physicians have doubtlessly condemned the medicine itself, without knowing that its deficiencies arose from the improper manner in which it had been prepared. Quite different is the formula of the Prussian pharmacopœia, which orders the strongest alkohol to be used for the extraction of the active principle of the bark.

After having endeavoured to show, that the tincture of bark should again take that place amongst the remedial agents, from which it has been unworthily expelled. It may be asked, what particular kind of bark should be used in its preparation; and here we are at the same loss for directions as we are concerning the strength of the alkohol. If we consult the pharmacopœia of the United States, we shall find these things left entirely to the discretion of the several apothecaries, who may prepare the medicine; for the only directions are, to take a certain quantity of bark, without any regard to the strength of each particular kind; consequently, we find in every shop, a tincture, the exact properties of which, a physician is necessarily ignorant of.

If we have succeeded in proving, that the alkaline principles are the only ones present in the tincture of bark; it seems proper to use only those kinds of the cinchona which contain the greatest quantity of these principles, and I believe them to be either the grey or red, which, in this respect, are superior to the yellow bark. (Calisaya) Had Mr. Carpenter been acquainted with the late interesting work on bark, from the pen of professor Goebel of Dorpat, he would not have asserted, in Coxe's Dispensatory:—that "this species, (Loxa) yields from 25 to 30 per cent, less cinchonine and quinine than the Calisaya

Arollenda does of quinine, and the proportion of cinchonine is much greater than the quinine;" and of the oblongifolia, he says, "From experiments on the oblongifolia, I procured 20 per cent. less cinchonine and quinine in combination of quantity, than the quinine produced by the same quantity of calisaya arollenda bark, and the proportion of cinchonine was rather more than half of the product."

From very accurate experiments made at our Labratory at Jena, we formed the following comparative tables of the contained alkalies:

The genuine Loxa	contains in one pound, 16 gr. quinine, 20 gr. cinchonine.
Calisaya	contains in one pound, from 84 to 95 gr. of quinine.
Oblongifolia	40 gr. quinine, 65 " cinchonine.

It will now be seen, that the red bark contains the most of the active principles, and that Mr. Carpenter's words, "but notwithstanding the prejudices which have so long existed in favour of the red bark, analysis satisfactorily proves, that it is inferior to the calisaya,"—would have been much more justly applied to the Loxa than to the red bark. My opinion is decidedly, that the tincture of the red bark would answer in every case where the exhibition of this medicine is deemed necessary; and I have been lately informed, that the celebrated Hahneman, mentions it in his organon. For this reason, I have prepared some of the tincture, which, I believe, will be found a very excellent medicine. It may here be proper to mention, that the red bark is the kind most liable to adulteration; frequently we find the yellow bark colored red; again, it is mixed with the red saunders wood, or the red powder of the hemlock tree, (Pinus canadensis.)

The bark should be powdered on a very damp day, as a great saving is thereby effected. My plan of preparing the tincture is, to take two ounces of the coarse powder, and mix it with 12 fluid ounces of alkohol, at 38° Beaumé, which is in the proportion of one to six. After a digestion of four days, during which time I shake it very often, the red colored fluid is filtered, when its specific gravity will be found diminished from 2½ to 3 degrees. In order that physicians who wish to use this preparation, may have a just idea of its strength, I am now preparing a very simple pocket instrument, which corresponds with Beaumé's hydrometer, and which, by indicating its specific gravity, will at once show them its real strength. I am of opinion, that this instrument may be applied as a test to laudanum, and many other official preparations.

COMMUNICATION.

Mr. Editor,—The recent announcement, in the New-York Medical Journal, of an instrument for the excision of enlarged tonsils, as an invention of Doct. David L. Rogers, together with a plate illustrating the same, has induced me to publish the following statement of facts, in order to secure to myself what I deem an honest and honourable right to a priority in its invention. In May last, my late preceptor, Doct. Vanderveer, of Flatbush, L. I., called on me to know where he could procure a proper tonsil instrument, when I reminded him of one, of which I had made a complete draft eighteen months before, whilst yet his pupil. I prepared, at once, a drawing similar to the original, which Doct. V. perfectly recollected, and which was the cause of his calling on me. Several other instruments were proposed at the time, the essential parts of which were much alike. The one originally suggested gave the most satisfaction, and we proceeded to Mr. Tieman's, (the maker of Dr. Rogers' instrument,) who we found exhibiting one so nearly similar to the drawing, that Doct. V. immediately recognized it, as the one he was about to order; the only difference being an additional handle, adding somewhat to the size, and not a little to the difficulty of its introduction into a child's mouth. Eight months before this time, I had given Mr. Tieman a draft of my instrument, together with a wooden model, illustrating the cutting part, for the purpose of having one made; but fancying it might still be improved, I had it deferred. The above facts were admitted by Mr. Tieman in presence of Dr. V., and they may, perhaps, account for the *wonderful* similarity between the two instruments. The following is the description of the one invented by me:

Suppose an oval steel ring of an inch and a quarter in its long diameter, with a groove cut completely through, so as to similate two rings, placed at a sufficient distance to admit a curved bistoury, which it completely conceals. At one end of this ring, a hollow shaft, three inches in length, is affixed, which has also a groove cut through its upper part, one inch and a quarter in length, precisely equal to the long diameter of the ring, and continuous with the groove in its upper circumference. This will exactly admit the transit of the knife across the ring which cuts the intervening tonsil. The knife is connected with a small rod, which goes through the hollow shaft. To this shaft, three-fifths of a five inch ivory handle is affixed, perforated in continuity with it, through which the rod comes, and is screwed on the other piece of the handle. When the instrument is adjusted, a slight pull at the extremity of the handle effects the excision of the tonsil.

In the instrument before the public, the elevation of the additional handle, does indeed cause a partial descent and a little more obliquity in the application of the cutting edge to the tonsil; but this is more than counterbalanced by the greater abduction of the jaw, which is required for its use. My instrument will make a perfectly clean cut, and cause the least possible obstruction to a complete view of the interior of the mouth.

It has occurred to me, that as the part of the ring nearest the operator, or from which the shaft proceeds, occupies the part of the mouth where there is no deficiency of room, it might be made sufficiently broad to conceal the knife, even after it had traversed the ring, thus removing the possibility of wounding, either the tongue or mouth.

(Signed) EDWARD H. DIXON.

June, 1831.

The above statement of Mr. Dixon, has been submitted to me, and I have no hesitation in saying it is entirely correct.

(Signed) ADRIAN B. VANDERVEER.

I have inserted this article, first, because it is not written in an angry tone; and secondly, because Mr. Tieman admitted before me and other physicians, that the only difference between Mr. Dixon's instrument, and that described by Dr. D. L. Rogers, was in the mechanism of the handle,—a difference already alluded to by Mr. Dixon.

EDITOR.

REVIEWS.

Considérations Générales sur le ramollissement gelatiniforme et sur le ramollissement pultacé de l'estomac. Par J. Cruveilhier, Paris, 1830.

This paper constitutes the first in the tenth *livraison* of his splendid work on Pathological Anatomy. The subject is peculiarly interesting, since from his discoveries, we are no longer compelled to study it in a medico-legal point of view.

Anatomists had often remarked, that the internal surface of the stomach presented a gelatinous aspect and consistence; still further, that in many cases where no suspicion of mistake or mal-intent on the part of the deceased, or any with whom he had converse, existed, this organ had even been found perforated; and this too, without the slightest trace of inflammation. Indeed we may say that all was uncertainty on this interesting point of pathological anatomy, until the genius of John Hunter was applied to the investigation. This celebrated man, as every physician must recollect, attributed it to the action of the gastric juice—a digestion of the stomach carried on after death.

Jeager, having observed this softening in individuals, who had exhibited during life certain morbid symptoms, was led to believe, that a quantity of acetic acid formed in the stomach in consequence of nervous derangement, and that it acted chemically on the mucous and other tunics.

In 1821, Cruveilhier presented a work to the Academy of Science, entitled, "*Médicine Pratique eclairée par l'Anatomie Pathologique*," *etc.*, in which he treated this subject in a clinical and pathological point of view. In this work, he has given a great number of cases, explaining the different forms of the disease; he has shown the analogy which exists between its symptoms and those of ventricular hydrocephalus; he has proved, that the perforations of the stomach, described by Chaussier and Percy, are merely the effect of this disease; and finally, he has proved that the large and small intestines are liable to be affected by the same destructive process.

In the treatise now before us, he says, that it results from the facts mentioned in his former work, and from many more since observed by him, "1st, That it is almost always possible to distinguish the existence of gelatinous softening, with or without perforation of the stomach, or of the large and small intestines. 2d, That it is often possible to check its progress."

The symptoms said to mark this affection, may be summed up as follows:—frequent green stools, if the disease be in the intestines, and mucous and bilious vomiting, if in the stomach; insatiable thirst, rapid emaciation, great debility, discoloration of the skin, general supineness, interrupted by plaintive cries and contortions, sourness of temper, slowness and irregularity of the pulse, and coldness of the extremities.

"In acute ventricular hydrocephalus, there is the same stupor and cries, with this difference, that the stupor is continual, and infant; he opens his eyes, and again soon shuts them without making incessantly goes on increasing; you can touch, stir, and torment the any complaint. Very heavy pinches are not sufficient to awaken him. His cries are spontaneous, abrupt, strong, articulate or inarticulate, and almost always accompanied with movements *en masse*, or partial and disorderly exertions, with capricious positions. The infant does not ask for food, but if it be placed in his mouth, he devours it; he swallows fluids with avidity. In a word, it is evident, from attentive observation, that the stupor is idiopathic in the cerebral, and symptomatic in the gastro—intestinal malady. Vomiting, slowness, and inequality of the pulse, and a decomposed appearance, are common to both diseases. But if we consider the difference relative to the age at which they declare themselves, a distinction becomes evident; thus the gastro-intestinal disease seldom takes place after two years of age; while the cerebral malady may occur from two to eighteen years. With regard to the respiration, it is slow and deep in the commencement of the cerebral diseases, which together with the state of the face, pupils, grinding of the teeth, stupor, and the frequent alterations for the better and worse, with the progress of the disease, should teach us to shun all error, even in this first period."

M. Cruveilhier recommends the *gélatiniforme ramollisement*, to be treated with a moderate milk diet, warm baths, and small doses of opium. The milk diet sooths the viscera, which are irritated by a too abundant and heterogeneous nutriture. The warm baths, by causing a gentle excitement on the cutaneous surface, give rise to perspiration and produce so powerful a derivation, that their emolli ent effect is repeated on the alimentary mucous membrane. Finally the opium, administered either by the mouth or anus, calms the irritation already existing in the intestinal nerves, and tends to prevent new disturbance.

This *ramollisement*, according to our author, does not only affect the large or splenic extremity of the stomach, but also the anterior wall of this viscus, the small and large intestines, and the inferior part of thc œsophagus. "It proceeds always, from the interior towards the exterior. At first, there is simple separation of the fibres, which intersect a glutinous mucus, and in no long time, these fibres are attacked by the destructive process, and finally disappear; so that the softened stomach or intestine resembles pellucid gelatin rounded into a tube, or a portion of one. If this transformation be complete, the disorganized parts are destroyed, layer after layer, and that which remains, is thinned. Sometimes the peritoneum only continues entire; but finally it suffers,—laceration takes place, and perforation is the consequence. The parts thus transformed, are discolored, transparent, possess an inorganic appearance, are completely devoid of vessels, and exhale a sour odor, not unlike that of clotted milk, without the smell of putrefaction or gangrene. A fact worthy of notice, is, that the softened parts decompose themselves much more slowly than those whose normal state remains unchanged. A stomach converted into gelatin by ebullition, gives a perfect idea of this morbid structure. I ought to mention here a remarkable phenomenom,—the black color of the vessels in the neighborhood of the disorganized parts; a tinge which I have never observed, in the contained liquids, nor diseased tissues. I have regarded the effusion of matter into the abdomen, which sometimes takes place, as a post mortem occurrence; for in none of the cases which I have examined, did there exist any traces of preritonitis, and I am not aware that this inflammation has been noticed by any observer."

Every physician and surgeon should bear these important facts in mind,—he should never forget that *ramollisemcnt gélatiniforme* of the stomach constitutes a special disease; for he may by such knowledge be enabled in many cases to save the life of sinking infants, and avoid giving evidence, that would endanger—nay even lead to the fatal conviction, perhaps of a truly affectionate mother.

If the opinion of J. Hunter, respecting this disorganization, be correct, may we not ask, why it does not take place, more or less, in every case? The fact is, however, as Cruveilhier has observed, that we meet with it but rarely. Again, it ought to occur less frequently in cold than warm temperatures, and more frequently when the examination is made at a remote period from dissolution; but we find it in all temperatures, and in subjects that have been examined a few hours after death.

This ramollisement, is almost always observed at the splenic extremity; because the liquids gravitate there. Sometimes the contiguous portion of the diaphragm is affected, also the œsophagus, mediastinum, and even the surface of the lungs. "I have even seen, (says our author,) the *gélatiniforme ramollisement* of the colon, extend itself to the surface of the kidney." All these facts would seem to warrant the opinion, that some of the phenomena of disorganization cannot be explained otherwise than by a menstruum which continues to act after death; nevertheless, we must admit, from what has been stated, that this process commences during life, and when uncombined with other diseases is the cause of death.

A short time since, an essay on this subject by Mr. Carswell, was read before the Royal Academy of Medicine, in which he endeavoured to show, that the opinion of Hunter, with respect to the period of this change, was correct; and more especially that acetic acid, as Jeager had supposed, was the agent in the dissolution.

Cruveilhier admits, that the conclusions at which Mr. Carswell has arrived, are genuine; but at the same time, he shews, plainly enough, that the disorganization described by him, is not the *gélatiniforme;* but what he very correctly denominates *pultacé.* For, "there exists a species of *ramollisement,* in which the mucous membrane is converted into a sort of pulp, of the same color as the contained liquids, and for the most part brownish, when death is produced by an acute or chronic disease, during the empty condition of the stomach. This disorganization always occupies the great extremity of the viscus; but sometimes it extends along the free borders of the folds of the mucous membrane to the pylours. In such cases the disorganized substance can be pushed off in the form of pulp with the end of the finger, and when the stomach is distended, the mucous membrane tears in a number of points. In a great many instances, the disorganization is limited by a plane, perpendicular to the axis of the stomach, passing through the œsophagean orifice. This limitaton of the *ramollisement pultacé* is explained on the one hand, by the accumulation of liquids in the large extremity; and on the other by the delicacy of the mucous membrane in this situation. In the advanced stages of this alteration, there is not only *ramollisement,* but complete destruction of the mucous membrane, so that the fibrous tunic is exposed, presenting a bluish-white appearance, which forms an obvious contrast with the mucous membrane.

In 1824, M. Louis, described this alteration very accurately under the designation *ramollisement avec amincissement et destruction de la muqueuse gastrique*, and he agrees with Cruveilhier, in the fact, that it is essentially distinct from the *ramolliscment gélatiniforme.*

To prevent the least misunderstanding, our author has given two plates, each containing two figures, representing the *gélatiniforme et pultacé ramollisement.* After having described both, and drawn a parallel between them, he next proceeds to shew that both these disorganizations can be produced at will, by the introduction of vinegar, or any other acid suspended in water, by fresh water, by alkaline water, and lastly by ebullution. "But, to produce this alteration by the aid of vinegar or any other acid, the dose ought to be very considerable, and it is only after a lapse of two or three days, that complete disease is established." From these facts, he concludes that the *ramollisement gélatiniforme* cannot be the product of a small quantity of acetic acid, intermingled with the gastric juice. Moreover, this state of the stomach often coincides with its vacuity; nor can we explain the disorganization of the œsophagus and intestines, by reason of the acetic condition of the gastric juice. And, as our talented author has observed, for the same reason that we call to our aid an acid as a solvent of the stomach we ought to hail an alkali for the same end in the large intestines; for the fœcal matter is evidently alkaline.

To conclude, we shall briefly state, that the pultaceous disorganization, is not, announced by any particular symptoms, and that it takes place under the most opposite circumstances; but for the most part when death has occurred during chymification.

GLEANINGS FROM FOREIGN JOURNALS.

On the improper use of the Corrosive Sublimate as an external application.

Doctor Miguel, of Neuenhaus, has reported the three following cases, shewing the impropriety of using the deuto-Chloride of Mercury as an external application, without at the same time administering internal remedies to combat its deleterious effects upon the system.

Case 1st.—A gentlemen who for two months had been affected with Psora, was ordered by his physician to use strong lotions of corrosive sublimate, without at the same time taking any thing internally. The eruption speedily disappeared, but he was seized with severe monomania, which continued until the eruption was reproduced, by means of antimonial and sulphureous preparations, baths, and other excitants of the cutaneous system.

Case 2d.—A robust man, aged 40, had for two years been affected with an eruption on both hands. He was ordered a lotion, containing the deuto-chloride of mercury; from which time he was seized with an obstinate cough, with violent pain in the breast, and sunk at the end of one year under tubercular consumption. This disease had never been known in his family, all the members of which were uncommonly robust and healthy.

Case 3d.—A little boy of 6 years, of a scrofulous habit, was affected with crusta serpiginosa, for which he had taken sulphur baths. As the disease did not yield to this treatment, the physician of the baths washed him with a solution of corrosive sublimate. The cutaneous eruption disappeared at once, but left the little sufferer in a lamentable state. He was tormented with violent pains in the head, his abdomen swelled, and his respiration became very difficult. The eruption was made to re-appear by the use of the æthiops antimonialis, combined with purgatives; upon which event the child recovered.—(*Horn's Archiv.*)

Cure of an Eruptive Disease on the Genetal Organs, by means of the Hydrocyanic Acid.

A woman of 50 years, affected with the above disease, was effectually cured in five days, by a topical application of an alcoholic solution of the prussic acid, made in the proportion of one and a half drachms of the acid to six ounces of strong alkohol. The same results were experienced in four similar cases.—(*Hufeland's Journal.*)

Traumatic Tetanus cured according to the method of Stutz.

A healthy woman of 19 years, received a severe wound upon the dorsum of the foot. At the end of a month, she was suddenly seized with spasms, affecting the muscles of the mouth and back. A few days after, a physician was called in, who found her with all the symptoms of tetanus. He took two pounds of blood from her, ordered a refreshing draught, with a gentle laxative, and warm cataplasms to the wound. At the end of a few days, the excessive vascular action had much abated, and the gonflation of the abdomen disappeared. He now attempted to diminish the excess of oxygen in the muscles; which, according to Stutz, is the immediate cause of the disease. For this purpose, he administered in the space of twelve days, 224 grains of opium alternately with the carbonate of potash. The spasms became more and more rare under this mode of treatment, which was not interrupted except during the invasion of a leucophlegmasia, that involved the whole body. Her bowels were kept open, and the urinary secretions encouraged. The leucophlegmasia subsided, but in its place an eruption appeared, resembling scarlatina. The laxatives and diuretics were discontinued for fear of checking the eruption, which was considered as critical, and diaphoretics substituted. In a few days, the patient was restored to health.—(*Idem.*)

Efficacy of the Ammoniated Copper in Epilepsy.

Doctor Urban, of Bernstadt, recommends the above salt as the most certain remedy in Epilepsy, when it is purely nervous and without complication. He gives six cases, in which he has experienced its great efficacy, of these we shall report two.

Case 1st.—Charles G. B., aged 20 years, of a choleric temperament, but robust habit, had been subject to epileptic fits from his fifth year. They returned at intervals of from five days to four or five weeks, and were extremely violent. No medical man had been consulted till the month of November, when Dr. Urban was called in. At this period he had an attack complicated with violent hæmoptysis. The Doctor ordered a moderate bleeding, and the usual antiphlogistic treatment. In about three weeks he had another attack, unaccompanied with hæmoptysis, but more violent than any which had preceded it. The Doctor could discover no reason for this affection, and being assured it was without any complication, he ordered a regimen the most rigorous, both physical and moral, and prescribed the ammoniacal sulphate of copper, under the following form:—

Sulph: Ammon: of Copper, eight grains, white lead and white sugar, of each 24 grains, to be made into 48 pills. Three to be taken morning and evening, for the first day, and on every succeeding day an additional pill.

The next attack did not take place for five weeks, and was much lighter than the preceding. The intervals between the others increased until the fifth, which was the last. But 16 grains of the sulphate were taken.

Case 2d.—Jeanne Dorothé L., aged 36 years, had enjoyed good health from her infancy until the year 1825, when in consequence of a severe domestic affliction she was seized with violent epileptic fits. They returned every few hours, and when Dr. Urban was called, she had five or six each day. She complained of great fullness and gonflation of the abdomen. Her stools were very scanty, her tongue coated with mucus, with anorexia and loss of taste. A cathartic produced several mucous discharges and dispelled the foregoing symptoms; but the violence and frequency of the fits continued. The patient not being able to take pills, the ammoniated copper was administered under the following form. Ammon: Sulph: Cupri. six grains, powder of gum arabic and white sugar, of each two drachms, divide into 12 parts, one to be taken morning and evening.

She took food, easy of digestion, and was kept in the most perfect quiet. Great nausea and vomiting succeeded to the administration of the sixth powder, and the fits appeared to increase in severity. The medicine was suspended for one day, and then taken as before. After the administration of the 12 powders, as there was but slight nausea, the sulphate was increased to eight grains; the other ingredients remaining the same. The violence and length of the fits soon began to diminish, although their frequency continued the same. The dose being now increased to one grain of the sulphate twice a day, the intervals became greater, and after having taken altogether 26 grains of the copper, the patient was restored to health.—(*Idem.*)

Polish Plait.

A woman, for two months and a half, was affected with a violent cephalalgia, accompanied with perspiration of the head, and a full pulse, both of which ceased upon the appearance of the Polish plait. But one night, from having left her bed suddenly, she became affected in the following manner:—she knew no one; her strength was invincible; her eyes sparkling, with the conjunctival ecchymoses; pulse full, hard, and frequent. Copious bleedings were practised, with fomentations to the head, blisters to the nape of the neck, sinapisms to the calves of the legs, and soles of the feet, together, with the internal administration of two grains of calomel every two hours. After the exhibition of 85 grains of calomel, and two drachms of the spiritus ammoniæ succinatus, which was administered every two hours in doses of 16 drops; the perspiration on the head returned, and reason once more resumed her seat. —(*Idem.*)

Hydro-Chlorate of Iron, a remedy against the Ramollissement of the Stomach in Infants.

In an epidemic, which raged in Heilbron, in 1825, Doctor Pommer examined the bodies of two infants, who had died of this disease.

In two other cases, which came under his care, he employed the hydro-chlorate of iron, with complete success.

Case 1st.—An infant, of 6 months, nursed by hand, had been well from its birth, until within eight days, during which time it rejected all food, and had from six to eight unhealthy stools each day. Its face was pale; its whole appearance indicated great distress the sleep was much disturbed; but the abdomen was natural, both to the sight and touch. As Dr. Pommer had lost two patients, (those alluded to) with precisely the same symptoms, in whom he had found a ramollissement of the stomach and intestines, he had recourse to the muriate of iron, in order to neutralize the chemical action which, he supposed, was the cause of the softening and decomposition of the coats of the stomach and intestines. He directed the child to take but two spoons-full of warm milk, twice a day, to have a cataplasm on the epigastrium, composed of equal parts of red bark, wild chesnuts, the bark of the willow tree, and some aromatic; with cold applications to the head, and sinapisms to the legs, and to take the iron internally, under the following form:—Root of Mallows, two drachms, boiled with a sufficient quantity of water to make two ounces, filter and add Gum Arabic, two drachms, hydro-chlorate of iron, half a scruple, syrup of mallows, six drachms. Two tea-spoons full to be taken every hour, after having well shaken the mixture. On the second day, 15 grains of the iron were administered, and on the third morning, for the first time, the infant slept for two hours, and seemed much better. On the fifth day, the vomiting ceased, and the stools became less frequent; the appetite improved, however, nothing but milk was taken. This treatment was continued until the child recovered. Forty grains of the hydro-chlorate of iron were administered in the space of seven days.

Case 2d.—An infant aged four weeks, who had the same symptoms, was cured by the use of the muriate of iron internally, without any of the external applications. In eight days it took 24 grains of this salt.—(*Heidelberger Klinische Annalen.*)

Influence of organic lesions of the Uterus upon the function of generation, by Professor Outrepont.

The author, in the following cases, shews that conception, notwithstanding the most severe organic lesions of the uterus, may take place, with a successful accouchement.

Case 1st.—A married woman of Wurzbourg, aged 48 years, menstruated regularly from her 16th to her 46th year, when the discharge ceased without any morbid effects, nevertheless her abdomen increased considerably in volume and hardness; her breasts became distended with milk, and she could feel the motions of a fœtus in the lower part of her belly. The neck of the uterus was much shortened, and its inferior part dipped into the vagina; a moveable body was observed, which gave way on pressure, and was undoubtedly the head of a small fœtus. The circumference of the abdomen at the umbilicus was 45 inches. Three spherical tumors could be felt immediately under the abdominal parieties, which appeared attached to the uterus. The woman suffered only the ordinary inconveniences of pregnancy. The head of the fœtus continued during the last month of this state, in the inferior segment of the uterus, and filled entirely the pelvic cavity. The parieties of the vagina and uterus were so thin, that the fontanelles and sutures of the head could be distinctly felt. At this time the ordinary consequences of the presence of the head in the lower part of the pelvis, appeared, such as bearing down pains, constipation, &c. &c. The contractions of the uterus commenced about 18 weeks after the first movements were felt and were very severe. The os uteri was dilated at the end of the 21st hour of labour, when the contractions became feblee and, finally ceased, so that it became necessary to effect the delivery with the forceps. The child was living and of the ordinary size. The expulsion of the secundines appeared to be the last act of vitality in the uterus; for it did not contract, and a hemorrhage came on, which nothing could check, and the woman died in convulsions at the end of 24 hours. Upon opening the body, the pelvis was found of the usual dimensions. Three sarcomatous tumors were attached to the anterior surface of the uteras, of which the largest was ten inches in length, six in height, eight in breadth, and twenty-one in circumference. They were under the peritoneum and upon the body of the uterus, from which they were easily separated, as they only adhered by cellular tissue and a few vessels. These growths were cartilagenous, homogeneous, without cavities and incompressible. In an analogous case, reported by Doctor Horlacher, *De sarcomate uteri, Onoldi*, 1820, the woman did not die till some weeks after her accouchement, and then in consequence of some affection of the breast.

M. d'Outrepont has reported two other cases, in which the tumors were developed within the uterus, and the pregnancies came to their regular terminations. The women both lived, and one of them became again *enceinte*, and was delivered in the eighth month of her pregnancy.—(*Gemeinsame d. Zeitschrift für Geburtskunde.*)

On Gangrene of the Uterus, by Doctor Matthew Gierl.

Madame A. Sauter, aged 30, of a lymphatic temperament, at the commencement of the second half of her first pregnancy, experienced a severe pain in the right hypocondrium, which was much augmented on pressure. The pain disappeared upon the application of five leeches and frictions with volatile linament. During the second half of her pregnancy, the abdomen did not increase as much as in the first.

She complained of nothing but extreme lassitude and weariness. The pains of child-birth came on at nine in the evening, in one hour the waters escaped, and at the end of the third, the os uteri was much dilated. The contractions being feeble and of short duration, the usual means were resorted to, without effect; for the labor continued in this way for several hours, when the head advanced into the *petit basin*, and the child was found to be dead. There was no efflux of blood, but a slight discharge of an ichorous and fœtid matter. The contractions did not increase in force until the third day, at five in the morning, when she seemed much fatigued and complained of great tension in the vagina, her pulse being weak, frequent and regular, and her tongue dry at the point. At seven, the head of the fœtus was expelled, but the mother fell into a swoon, and vomited a fœtid matter of a chocolate color. The uterine contractions having ceased, Dr. G. endeavoured to bring away the body. At the first attempt a great quantity of fœtid sanies was expelled, and she again fell into a syncope, from which she did not recover. Upon opening the abdominal cavity, a very fœtid vapour was exhaled. The uterus, situated at the left side, had the form of a large sack, and looked like a bladder filled with blood. It must have contracted but little after the escape of the child; for its parieties were not more than one line in thickness, and it had no proper orifice,—the part usually representing it, being transformed into a gangrenous ring, which could be raised and separated from it with the handle of a scalpel. Its internal surface was of a bluish colour and coated with pus. The placenta adhered in some places, but was detached in the centre, and between it and the uterus there was a bed of thick brownish-yellow pus. The membranes of the ovum, as well as umbilical cord, were so much decomposed that they gave way under the least touch. The stomach was nearly three times its natural size, and contained a quantity of the brown matter already mentioned, but its tunics were unaltered. The superior portion of the small intestines was filled with the same matter. The other organs were in a state of integrity. The child appeared to have arrived at maturity, but had evidently been dead some time.—(*Ibid.*)

The Nature and Treatment of some Chronic Disease. By Doctor H. Hoffman.

This author treats of the renal blennorrhœa, renal hemorrhage, renal phthisis, and phthisis pulmonalis.

The signs of blennorrhœa are, in the first place a discharge of urine mixed with mucus, which does not become limpid, even when a sediment is deposited, great sweating, with a diminution in the quantity of urine, and a sensation of pressure and tension in the renal and lumbar regions. Pain is felt along the course of the ureters extending down to the thighs, in which there are shooting pains with a sensation of coldness. The renal catarrh becomes more evident when it alternates with similar affections, such as bronchitis. Often, however, from the stomach being sypathetically affected, it is difficult to discover the primitive lesion of the kidneys. This affection of the stomach is characterized by a feeling of weakness and vacuity in the epigastrium. The renal catarrh consists in an increased activity of the secreting vessels of the mucous membrane of the kidneys, without any visible alteration of this tissue. There is, however, a state of congestion in the vicinity of the affected organ. Dr. H. recommends for the cure of this disease, the leaves of the uva ursi, to be taken first in the form of infusion, and then powdered; also the lichen islandicus, with some acid. The diet of the patient should receive particular attention.

The renal hemorrhage of which the author speaks, is an affection purely idiopathic, owing to internal causes, and chiefly to a want of organic action in the veins, which do not receive the blood sent by the arteries and which consequently passes into the urine. The indications here are to increase the venous action by the employment of the mineral acids, and in urgent cases, by local depletion.

The renal phthisis, according to Mr. H. may be of two kinds, mucous and purulent. The first is often a consequence of the renal blennorrhœa; the second, of renal abscess, and is preceded by symptoms of nephritis. When pus is forming in the kidneys, the digestion is deranged and the patient has the color of a person with diseased liver. There is torpor of the thighs, hips, testicles, superior and inferior extremities, and he becemes incapable of motion. The affected parts possess an exquisite degree of sensibility. The perspiration is copious and extremely fœtid. The pain in the kidneys is much augmented by lying on the side. A sediment containing a white pus is deposited from the urine, which becomes clear in a state of repose. In the treatment of this disease, Mr. H. recommends the mineral acids in an infusion of digitalis, together with the leaves of the uva ursi. To regulate the secretion of pus, he uses the phosphate of lead, which he thinks can be administered more frequently than the acetate, without injurious consequences. In the meantime he employs a decoction of the lichen islandicus, acidulated with the nitric and hydro-cloric acids.

In phthisis pulmonalis he recommends the minerals acids as the proper means of improving the action of the venous system. In the commencement of the disease they may be used alone, but afterwards only to second the action of other remedies, amongst which he considers the quinquina and lead as the most effectual.

(*Hecker. Litterar. Annalan.*)

Dr. Muhrbeck on Hooping-Cough.

In an epidemic, which raged at Demnin, Doctor M. states, that an amulet composed of the flour of sulphur and musk, worn on the pit of the stomach, prevented the contagion, particularly amongst young children. That convulsions were prevented, in a majority of cases, by the continual use of flowers of sulphur, and the root of belladona. The sulphur was given morning and evening, or four times a day, in sufficient doses to produce slight catharsis, and the belladona, in doses of from one-sixth to a whole grain, according to the age of the patient. The sulphur seemed more effectual than the belladona, but even this proved useless after the respiration had become difficult and convulsions had set in. Then it was, that the hydrocyanic acid acted like a specific. Dr. M. prescribed it, prepared according to the Prussian pharmacopæa, in doses varying from a quarter to a drop, with equal parts of the syrup of mallows and distilled water, to be taken every two hours in a small quantity of coffee. When there was vomiting he used mint water. Under this mode of treatment, the convulsions and cough disappeared very speedily. The hydrocyanic acid was found most efficacious in the early stages of the disease.—(*Magazin fur die ges. Heilkunde.*)

Chronic Affection of the Spinal Marrow cured by the nux vomica and cold affusions, by M. le Docteur Schlesinger, of Marienbourg.

Jeanne Dyk, aged 28 years, with rather a weak constitution, until her 18th year, enjoyed good health. At this period she experienced excessive pains in the lower part of her back, which were followed by great muscular debility. Her appetite was good, and the only thing of which she complained was a sluggishness of the intestinal canal. This state of things continued for several years, at the end of which time she became occasionally so ill, that she could not quit her bed; she loathed her food, and her rest was disturbed; her breath was offensive and her teeth became loose. Continual injections were required to produce alvine evacuations, which were very fœtid. All these symptoms passed off spontaneously, but leaving great prostration of strength. The patient in her 25th year had a fall, in which she luxated her left arm, but it was reduced without any ill consequences. In the month of December, 1827, all the symptoms heretofore narrated, returned with increased violence, and the patient was obliged to keep her bed. She found the left foot would no longer support the weight of her body. By the month of March, she had nearly lost all strength in her left arm and the fingers of the corresponding hand, which she could not raise without experiencing great uneasiness in the region of the heart. In the month of June the debility had extended to the extremities of the right side, when her friends called in Doctor S. to her assistance. After an examination of the patient, this gentleman conjectured that the spinal marrow was the seat of the disease; and believing in the existence of lymph or serum as a consequence of chronic inflammation of the arachnoid membrane of this organ, he considered the nux vomica as the most effectual remedy. On the 21st August, he gave her pills made with one grain of the nux vomica, which were increased until the patient could take eight morning and evening, at which time their narcotic effects appeared. Spasms of the extremities came on five or six times an hour, together with great anxiety, extreme nervous sensibility, violent pain in the head, great inclination to vomit, and an almost tetanic state of the body supervened. The medicine was discontinued. In a few days these latter symptoms disappeared, and the patient felt a considerable increase of muscular strength, for she could now stand on her left foot. On the 21st August, she took an infusion of arnica and quinquina, the yolks of three eggs with wine, and solid food. Dry frictions were practised upon the vertebral column and the extremities, as well as frictions, with a solution of the balsam of Peru, in the compound spirits of angelica. These measures were continued for three weeks, without meliorating the weakness of the extremities. The patient could walk with the assistance of a crutch, but this improvement was felt immediately after the exhibition of the nux vomica, to which recourse was again had. When the patient had taken five pills morning and evening, the symptoms before related were afresh experienced. After their disappearance, she could walk with ease, and raise her left arm, without difficulty or pain in the region of the heart, and sit up several hours each day. Saline baths were now ordered to hasten the cure, together with cold affusions on the back; after which the back and extremities were rubbed with phosphoric linament. Two tea-spoonsfull of the etherial tincture of the acetate of iron were taken four times a day, in an infusion of arnica and quinquina. By this treatment the state of the patient was much improved, but the weakness of the extremities and belly continued. For the third time recourse was had to the nux vomica. Symptoms of narcotism were produced by five doses, after the disappearance of which the patient could walk without support and occupy herself with light work. She took twenty baths, together with cold effusions, and on the 22d October she was perfectly well.—(*Hecker Litterar Annalen der ges. Heilkunde.*)

Miliary Fever treated with three curative means, simultaneously employed in its most acute stage. By Doctor Ant. Galli, first physician to the Hospital of St. Julien, of Novare.

The subject of the following observations was a woman of Novare, aged 33 years, of a delicate constitution, who had been sick from the 7th of November to the 4th of December, following. She had had a favorable accouchement on the 5th of the preceding August. When Mr. G. was called to her, she was feverish, and had all the symptoms of cynanche tonsillaris joined with inflammatory fever. She was bled to sixteen ounces, and took a decoction of tamarinds and cassia. By the sixth day of her illness, the phlegmasia abated; but only after the abstraction of ninety-six ounces of blood. On the seventh, a miliary fever usurped the place of the cynanche tonsillaris, without assuming any unfavorable appearances; but it was soon accompanied by the most alarming symptoms, which required the application of leeches to the temples, soothing mixtures, vesicatories to the legs and epigastrium, grain doses of opium, soothing electuaries, cold drinks, ice water, sedative lavements, blood lettings, and other remedies. On the 24th November, the 12th day of the eruption, after a profuse perspiration, the symptoms were mitigated, and in the beginning of December, the patient was perfectly convalescent.—(*Giornale Analitico.*)

Dr. Graves on the Effect of Posture on the Pulse.

1. That the greatest difference occurs in patients labouring under fever, or in a debilitated state, in consequence of fever or any other cause. It may amount to thirty, forty, or even fifty, between the horizontal and erect postures.

2. That this difference decreases after the first quarter of an hour, in most cases, but always remains considerable as long as the same position is observed.

3. That in persons not much debilitated, the difference is much less than that stated above, and often does not amount to more than ten.

4. That, when the patient lies down, the pulse rapidly falls to its former standard.

5. That in some the frequency is greater between the horizontal and sitting posture, than between the latter and the erect; while in others the contrary takes place, so that generally the frequency in the sitting posture may be taken as a mean.

In persons convalescent from fever or acute diseases, I find it is extremely useful to the physician to ascertain the comparative frequency of the pulse in the horizontal and erect position. The greater the difference the greater is the debility of the patient; and, consequently, the more guarded must his medical attendant be in allowing him to sit for any length of time, particularly if the pulse, on his lying down, does not resume its usual degree of frequency.

(*Dublin Hospital Reports.*)

Dr. J. Rhea Barton's Case of Longitudinal Section of the Lower Jaw.

On the 28th of July, 1830, Isaac Duffield, a mulatto man, thirty years of age, from the State of Delaware, was admitted into the Pennsylvania Hospital, with a disease said to have originated in the gum which had been injured by the pressure of the fulcrum of the key, used in the extraction of a molar tooth of the left side of the lower jaw, eighteen months previously.

It assumed the form of a tumour, involving the gums, alveolor processes, and part of the body of the bone, and gradually increased in size until it had taken entire possession of the mouth, forcing the tongue into the pharynx, and stretching the jaws widely apart. A large portion of the tumour also made room for itself by escaping from the cavity of the mouth, and rising upon the outside of the superior maxillary bone, thus producing great deformity by protruding the lips and left side of the face and neck. Where this loathsome mass presented itself at the mouth it was in a state of ulceration.

The tumor was of a florid red colour. It was dense, elastic, and lobulated, and in its structure partaking much of the character of the gums. From its surface was secreted large quantities of muco-purulent matter.

Upon introducing a spatula into the mouth, and putting the right cheek upon the stretch, the patient could force the tip of the tongue into view between the half arches and the side of the tumor.

As he had neither room for solid food, nor power to masticate it, his nutriment was taken in fluid form by a similar process of distending the cheek.

Epulis is the name assigned by writers to this species of tumor, which, though not malignant in its early stage, nor *essentially* so at any period, is said frequently to eventuate in a cancerous disease.

The peculiarity of the operation I am about to describe consists in the *longitudinal* section of the bone, by which *a rim at the basis of the bone* was preserved to support the under lip and chin, thereby obviating the distortion of the face consequent to the usual mode of cutting out an entire piece of the bone by the perpendicular section.

Operation. On the 4th of September, an incision was commenced over the left angle of the lower jaw, carried on a line with the under edge of the base, around to near the facial artery of the opposite side. This incision extended through the integuments and muscles of the cheek and lip, so as to open the cavity of the mouth. The under lip, towards the left commissure of the mouth, was cut through to meet the first incision at a right angle. The tumour was thus brought into view, exposing fully its connexion with the lower jaw, to the anterior and posterior surfaces of which it firmly adhered. The adhesions were detached from the anterior surface of the bone, as high from the base as it was sound. A section was then made with a saw, through the body of the bone, just below the maxillary canal, in a line parallel to the base of the jaw, and extended as far back as the roots of the last molar tooth, on the left side, and to the last but one on the right side. A perpendicular section was then made with a narrow bladed saw, between the teeth through the alveolar process, until it met at right angles the first division of the bone. The portion thus insulated contained the diseased mass. The tumour was then elevated, and its connexions with the inner surface of the bone separated. It now came away entire, exposing the body of the bone in a healthy state, except at one point on the surface, which was readily taken off with the nippers.

No blood-vessels were taken up but the left facial and right coronary arteries;

the hæmorrhagy from other points ceasing spontaneously. The flap was now replaced, and the sides of the incision carefully adjusted; the lip closed with the hare-lip pins, and the rest supported by interrupted sutures and adhesive plaster.

The patient did well; the wound united by the first intention, and in a short time the parts within the mouth healed over the bone. The tongue regained its natural position. The distended and flaccid lips and cheek gradually contracted to their natural dimensions, but their collapse was prevented by the rim of the jaw which had been left. The contour of the face was thus preserved, and the patient recovered the power of masticating his food with the three remaining teeth, and their antagonists of the upper jaw.

On the 9th of October following, the man was discharged from the Hospital cured, and almost incredibly free from deformity.—(*Amer. Journal of Medical Science.*)

On the Liriodendron Tulipfera, American Poplar or Tulip Tree. By Benjamin Ellis, M. D.

Our readers will perceive by the preceding essay that this tree has acquired an increased interest, from the discovery of a new organic principle in the bark of its root, by Professor Emmet of the University of Virginia.* This circumstance has induced us to furnish a brief sketch of its natural history, accompanied with a plate, with the view of rendering more complete the very interesting article on "*Liriodendrine.*"

The tulip tree may indeed be called the pride of the American forest; noble in all its dimensions, attaining an altitude of from seventy-five to one hundred feet, and measuring from two to five feet in diameter. It is surpassed by few or none in the richness of its foliage, the beauty of its flowers, the uniform straightness of its trunk, and the regular disposition of its branches; its wood is abundantly employed in the arts and in rural and domestic economy, and its bark has been highly extolled as a remedy in fever and some other diseases. It is known by different names in different parts of the country; such as, white wood, canoe wood, American poplar, American tulip tree, tulip bearing poplar, &c. The term tulip tree is obviously the most proper, from the palpable resemblance of its flowers to the garden tulip, and it is to be wished, for the sake of avoiding confusion, that this name were universal; but American poplar is by far the most common throughout the United States. According to Michaux, the northern limit of this tree may be placed at the southern extremity of Lake Champlain, in lat 45°, and it seldom extends further east than the Connecticut river, in long. 72°. From these points it is widely diffused to the south and west, attaining its greatest degree of developement and perfection in the rich bottom lands of the western states; it is generally found mingled with other trees, such as the hickory, black walnut, butter nut, wild cherry tree, &c. but sometimes it was observed by Michaux to constitute pretty large tracts of forest in Kentucky, where he found this tree larger than in any other part of the United States.

Its vegetation is repressed in the colder climates of the northern states; and in the eastern parts of the Carolinas and Georgia it does not flourish well, owing to the nature of the soil, which is either too dry and steril, as in the *pine barrens*, or too wet, as in the *swamps*. "The genus Liriodendron, to which Linnæus has assigned four species of trees, is characterized by a *double calyx; the outer of two, the inner of three leaves; petals six; seeds imbricated into a cone.* The species tulipfera, the only one in America, is remarkably distinguished by its *lobed and truncated leaves;* together with several other of our finest flowering trees and shrubs, the Liriodendron is found in the class *polyandria*, and order *polgynia*, and the natural orders *coadunatæ* of Linnæus, and *magnoliæ* of Jussieu." In the stucture of its buds and the developement of its leaves it is no less peculiar than in their outline; each leaf bud is composed of scales closely applied upon each other, and it forms an oval sack, in which is enclosed the young leaf, to be unfolded as it acquires sufficient maturity to bear exposure to the light and air; several sacks are thus embraced, one within the other, which swell, burst, and evolve the leaves in succession, so that from one original or principal sack, five or six leaves will unfold on young and vigorous trees.

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* The Essay above alluded to was printed in our last.

These sacks or sheaths swell to a large size before bursting, and the remains of them, being converted into *stipulæ*, continue attached to the leaves until they are half-grown. In the warm and damp weather of our spring these leaves grow very rapidly, and acquire a breadth of six or eight inches. They are supported on long pitioles, alternate, somewhat fleshy, very smooth, and of a bright green colour; in form, as before observed, they are altogether peculiar, and are a distinguishing feature of the tree. They are divided into three lobes, of which the middle one is horizontally notched at its summit, which gives it the appearance of being four-lobed; and the truncated extremity, which gives to the leaf its singularity, bears considerable resemblance to the tail of a fish. The two lower lobes are rounded at the base, and in the larger leaves they are furnished with a tooth or additional lobe on the outside.

There is one variety of this tree whose leaves are not pointed, but very obtuse.

The flowers are bell shaped, large, brilliant, and on detached trees very numerous. They are variegated with different colours, among which the shades of yellow predominate and they are in common seasons fully expanded about the middle of May. Their odour, though faint is agreeable, and they produce a singularly beautiful effect when surrounded with the luxuriant foliage of this magnificent tree.

"The outer calyx has two triangular leaves, which fall off as the flower expands; the inner calyx consists of three large, oval, concave, veined leaves of a green colour, spreading at first, but afterwards reflexed. Petals six, sometimes more, obtuse, concave, veined of a pale yellowish green, marked with an irregular indented crescent, of a bright orange on both sides, towards the base.

"Stamens numerous, with long linear anthers opening outwardly, and short filaments; pistil, a large conical acute body, its upper half covered with minute, blackish, recurved stigmas, its lower furrowed, being a mass of coalescing styles and germs."

The fruit is a cone of two or three inches in length, formed of a great number of very thin narrow scales, attached to a common axis and pointed at the summit. Each of these, when well filled, consists of sixty or seventy seeds, of which never more than one-third, and some seasons not more than seven or eight of the whole number are productive. It is stated that all of these seeds prove abortive for the first ten years, and even after the trees have attained that age, the seeds from the summit branches of the large ones possess the power of germinating in the greatest perfection.

Until the diameter of the tulip tree exceeds seven or eight inches, the bark is smooth, even, and of a brownish colour; afterwards it cracks, and the depth of these fissures, and the thickness of the bark, are in proportion to the age and size of the tree. The branches, which are not very numerous, when of one summer's growth, are pithy and of a shining blue colour; those of two seasons old are covered with a smooth brown bark, and, when broken, emit a strong but rather agreeable odour.

The bark of the trunk, branches, and root, is brought to our druggists by those who derive a slender revenue from collecting our indigenous articles of the materia medica. That from the tree and limbs is in pieces of three or four inches long, deprived of its epidermis, of a yellowish white colour, very light and easily broken. The taste is pungent and aromatic, somewhat camphoraceous, bitter and very sightly astringent. That from the root comes in irregular pieces, three or four lines in thickness, rather browner than the preceding, and partially stripped of its epidermis.

When drying it gives off a heavy and not very agreeable odour; the taste is perhaps more heating and aromatic than in that taken from the tree, and it is rapidly diffused over the tongue and fauces, leaving a tolerably permanent impression of warmth in the mouth.

The tincture of the bark of the root is of an orange yellow with a shade of red, not very unlike the colour of Teneriffe wine; the taste in a high degree warm, bitter, aromatic, and penetrating. The odour of the alcohol conceals that of the bark. The colour of the aqueous infusion resembles that of the spirituous but it is rather paler; the smell is more perceptible, but the taste is more feeble, and not very agreeable.

The bark of the Liriodendron has long enjoyed some reputation as a remedy in the cure of intermittent and other forms of fever, as well as in rheumatism, dyspepsia, &c. It is probably much more frequently used in domestic than in regular practice. By Dr. Young, formerly of Philadelphia, it was strongly recommended in a letter addressed to Gov. Clayton, of Delaware, which was published in the American Museum for December, 1792.

The latter gentleman in reply, remarked that he considered it more bitter and aromatic, though less astringent, than the Peruvian bark, and found it, combined with the barks of the dog-wood and white-oak, beneficial in every case to which the cinchona was applicable. The specimens I have tasted do not certainly manifest this striking bitterness, and the superiority which he ascribes to it in this respect over the bark of Peru, can only be accounted for by the fact, that it is only a few years since the physicians of this country were acquainted with more than one kind of cinchona, and that was the Carthagena bark, an article now justly esteemed nearly worthless.

Dr. Young ascribes to it great efficiency as a febrifuge; as a remedy in consumption, dyspepsia, hysteria (combined with laudanum,) cholera infantum, and finally as a vermifuge. For the latter purpose, we are informed, the infusion is given in large quantities to horses in some parts of the country. Sometimes it excites vomiting, and cannot be borne without the addition of laudanum; at others it operates as a cathartic. It should never be given in acute diseases, before the excitement has been subdued by proper depletion. As the active properties of this bark evidently depend on a volatile principle, it loses its virtues by time, and should therefore be kept secluded from the air, and collected annually for medicinal purposes. The bark of the roots is believed to be more energetic than that of the tree or branches, and the proper season for gathering it is in the winter, before the sap begins to circulate. Michaux states, that in Paris a spirituous liquor is made from the fresh bark of the poplar roots, with the addition of a sufficient quantity of sugar to render it agreeable.

The dried or recent leaves steeped in boiling water are considered by some as a specific in the cure of inflammation of the jaw and face, and I have been assured that the relief procured by this kind of fomentation was very prompt and complete.

The bark is introduced into the materia medica of the United States Pharmacopœia, but it has no officinal preparations.

It may be given in the form of tincture, infusion, or powder. The latter is considered the most efficacious, and its superiority over the aqueous preparations has been accounted for by Professor Emmet. The dose in substance may be from ℈j to ʒij.

The colour and quality of the wood of the tulip tree are said to be greatly influenced by the nature of the soil and the kind of exposure. From the appearance of the wood, it is distinguished by the names of white and yellow poplar by the mechanics; and although there are some general features by which a practised eye can judge with tolerable accuracy between the two while standing, yet the difference can only be ascertained with certainty by cutting into the trees.

The wood of the white poplar is of a coarser grain, harder, and the yellow heart bears a much smaller proportion to the sap than in the yellow variety. It is consequently much less valuable for the purposes of the mechanic, and is subject to decay more rapidly. This tree has been transplanted to Europe, and is carefully cultivated as a rare ornament of the park and pleasure grounds. It flourished well both in England and on the continent, and is highly valued for the attractions it possesses, in the beauty of its flowers and foliage, in its magnitude and utility.—(*Jour. Phil. Col. Phar.*)

Castigator is informed, that his communication respecting some operations at the New-York Hospital cannot be inserted in this Journal.

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OPHTHALMIC REPORT.

[Continued from p. 134.]

Corneal Affections.

I.—That, when in sub-acute sclerotitis, the cornea becomes muddy from lymphatic exudation beneath the conjunctiva, and one or more albuminous deposits, without a disposition either to suppuration or ulceration, form beneath this membrane; stimulants aggravate the disease, which is readily cured by mercury.—(See *Private Joseph Jenning's Case*, p. 130—1.)

September 10th, 1826.—James Dawson, æt. 18, of a soft plethoric habit, and marked with cicatrices, resulting from scrofulous ulcerations, says—that three weeks ago, he was affected with inflammation of his right eye, which yielded to depletion. Now he labors under lancinating pain of the same organ, with tepid lachrymation, and great intolerance of light. On examination, the cornea appears muddy, and two albuminous deposits exist on either side of the axis of vision. The corneal border is surrounded by a zone of small pink vessels, and the arterial and venous trunks of the conjunctiva, are preternaturally turgid.

R. Submur. Hydrargyri, gr. v.
Pulveris Opii. gr. ss. quartis horis.

12th. Mouth sore; pain, lachrymation, and intolerance of light, have subsided.

25th. Mouth well; cornea clear, save to a very small extent, in the site of the external albuminous deposit.

II.—That, in scrofulous children, the retina not unfrequently becomes irritable,—as marked by intolerance of light, and tepid lachrymation; that this morbid affection gives rise to spasm of the muscles belonging to the eye; that they assist the primary affection in producing an increased quantity, and irregular distribution of blood in these organs; that the conjunctiva becomes engorged, and, from the continuance of the primary irritation of the retinæ, with which it strongly sympathises, finally becomes thickened,—even in front of the cornea; that minute vescicles, or, more properly speaking, pustules form on the sclerotica and cornea, and soon begin to ulcerate, for the most part, over the sclerotico-corneal border; that not unfrequently the ulcerative process commences nearer the axis of vision, and that then red vessels cross the corneal margin, and terminate abruptly in the ulcerated point; that the ulcer or ulcers, thus formed, are, for the most part, irregular at their edges, small, superficial, and of a gray color; that this affection is peculiarly liable to exacerbations from the slightest causes, and is likely to be protracted, for not only weeks and months, but years, attacking, in succession, the different parts of the cornea; that, as the infant advances in years the disease is disposed to subside of itself, and that, too, without leaving behind it any great deformity; partly because the absorption of any lymphatic deposits that may have taken place, previous to, and during the ulcerative process, is more rapidly affected in the young than old subject, and partly because the ulcers scarcely ever extend far into the substance of the cornea; finally, that this disease is best treated, by country air, vegetable diet, cathartics, composed of rhubarb and hydrargyrus cum cretâ, keeping a blistered surface discharging on the nape of the neck, the occasional instillation of the virum opii, and the ox-muriate of mercury, in the proportion of a grain of the latter to an ounce of the former, anodyne fomentations, and free exposure of the eye to the air, and moderate light.

[This form of disease is very common in children under the age of ten years, and is constantly confounded with the affection of the sclerotica, treated of in sect. iii. p. 130; and described by systematic writers under the term corneitis.]

III.—That when a segment of the cornea becomes muddy, in purulent ophthalmia, it depends upon excessive sclerotic inflammation extending to the cornea, into which lymph is effused.

The different cases, which I have related under the head of purulent ophthalmia, as requiring bleeding and mercury, prove this beyond all manner of doubt; because the symptoms of sclerotitis were present in all of them before the cornea became hazy. The continuation of the vessels of the sclerotica to the cornea, explain this axiom, and the vast difference in the vascular communications, between the conjunctiva, where it covers the sclerotica and cornea, clearly demonstrates, why the inflammation extends more rapidly from the conjunctiva to the sclerotica, than cornea.

IV.—That the opacity of the cornea, produced by the lymph, mentioned in sect. iii. often remains for a considerable time after the ophthalmia has ceased, and, if not very extensive, and generally diffused, will subside without treatment; but may, in the greater number of cases, be more readily removed by an alterative course of mercury.—(See *the first part of Private John Gilmore's Case*, p. 122.)

March 4th. Lower segment of the cornea dusky.

April 14th. Discharged from hospital, the cornea being still opaque below the axis of vision. I examined this man two months afterwards, and found that the cornea had regained its natural transparency.

June 11th, 1827.—Martin Houston, a strong, healthy lad, æt. 18, has recovered from gonorrhœal ophthalmia of the right eye, with considerable opacity of the lower segment of the cornea, depending upon lymph, effused during the severity of his disease.

July 13th.—Cornea a little more clear than when I last saw him.

R. Massæ. Pilul. Hydrargyri, gr. v. ter in die.

In ten days his mouth became slightly touched, when I directed him to take but two pills a day. Suffice it to say, that his mouth was thus kept in a tender state for three weeks; and on the 1st of September, when I last saw him, the opacity had nearly subsided.

V.—That sloughing generally follows the morbid state described in the last section, as manifested by the external layers of the cornea changing to an ash color, becoming elevated above the surrounding parts, and being intermixed with a brownish red secretion, producing an appearance, as if the iris was inflamed, and protruding through the slough.—(See *the first part of Private Thomas Triel's Case, p.* 123.)

June 26th. Lower segment of the cornea ash-colored, and slightly elevated.

27th. Centre of the slough of a reddish colour. I could relate many cases to the same end.

VI.—That pus is sometimes effused, between the layers of the cornea, in purulent ophthalmia, without any lymphathic boundary, as in the cellular tissue in phlegmonous erysipelas.—(See *the first part of Private Cornelius Keogh's Case,* p. 121.)

February 10th. Layers of the upper segment of the cornea separated by pus, without a lymphatic boundary.

The pus was let out by punctures, made with a cataract needle; but the cornea, in the site of disease, never recovered its transparency.

VII.—That, in acute sclerotic inflammation, an abscess may form in the substance of the cornea, which, if not punctured, will be likely to burst into the anterior chamber of the eye.

Mr. K. labored, in *January*, 1827, under sclerotitis of the left eye, produced by the use of local stimulants, applied for the relief of conjunctival inflammation, depending on a gouty diathesis. After the sclerotic disease had existed for eight or ten days, a small abscess formed in the outer segment of the cornea. The abscess was punctured, and he was quickly salivated. He soon got well, with very slight opacity in the portion of the eye, which had suppurated.

I have seen two cases, where the patients would not submit to the use of the needle, and the consequence was rupture into the anterior chambers.

VIII.—That hard, white, and elevated concretions, form in the body of the cornea in chronic sclerotitis, with a sudden increase of inflammation; and that incision, fomentations, and mercury, are the best means of cure.

Private George Scallon, 57th regt. was admitted August 28th, with acute conjunctivitis of the right eye, for which stimulants were employed. In a short time sclerotitis took place, and in spite of antiphlogistic treatment, continued to increase. On the 2d of November, a firm, white, and elevated tumor formed, in the outer and inferior part of the cornea, attended with an augmentation of the zone of vessels, a deeper tint of the sclerotica, an increase of pain, and intolerance of light, together with disagreeable sensations of roughness in the organ affected.

The point of a cataract knife was passed through the projection, fomentations were applied, and mercury administered. On the following day a bunch of vessels crossed the corneal border, and terminated by penetrating the divided tumor. By the aid of a glass, I easily discovered that it had become highly vascular, and could, from day to day, observe its change of color, from white to yellow, and its gradual diminution, until it completely subsided.

IX.—That the conjunctival layer of the cornea suddenly becomes vascular, with effusion of serum between it and the body of the cornea, when acute or rapid purulent ophthalmia attack persons, who have labored under conjunctivitis previously, or are debilitated by age, climate, or disease.

Private Hugh King, æt. 35, 46th regt., a weakly man, who suffered much from ophthalmia in India, on the 6th June received a contusion on the nose, and on the 7th was admitted, with superficial vascularity and muddiness of the cornea, attended with conjunctival relaxation, and muco-purulent discharge, without pain or intolerance of light.

App'r Lot. Nit. Argent. p. d.

Under this treatment he soon got well, and was discharged to his duty.

In the first section of my report for the year 1826, I thus expressed myself, on this subject:—

> Invalids, whose frames were relaxed by age, intemperance, and service in tropical climates, and on their arrival in England had recourse to drinking, and subsequently exposure to damp night air; or those who, after being discharged from hospital, cured of chronic ophthalmia, subjected themselves to the same abuses, were admitted with profuse gelid lachrymation, increased mucous and sebaceous secretions, sensations of roughness, enlargement, lividity, and tortuosity of the conjunctival vessels, with a strong tendency to cross the cornea.
>
> The treatment of this form of disease is not difficult. Stimulating applications, with rest, and purgatives, appear sufficient.
>
> The reader will easily discover, that this is merely an aggravated form of the malady, described in sect. ii. p. 116.

X.—That chronic sclerotitis is often accompanied with thickening, softening, and vascularity, of the cornea itself, to be distinguished from a like disease, which seems to depend upon a change in its conjunctival layer, the consequence of granulated lids. In the former, the morbid alteration takes place slowly, and the vessels advance *en masse;* whereas, in the latter, the progress of the disease is more quick, and the vessels come in a scattered manner from the conjunctiva. When the proper corneal substance is affected, an alterative course of mercury is necessary; but when the conjunctival layer is only diseased, stimulants suffice for a cure.

[Both these affections have been confounded together, and described under the term, *vascular cornea.* This appears more incomprehensible, when we recollect, that one is but too often produced by stimulating applications; while the other results from the want of the same. Moreover, the treatment required for each, is widely different.]

Ulcers of the Cornea.

I.—That, when the cornea is vascular, and the lids granular, the centre of the cornea becomes abraded, the diseased surface being perfectly transparent (glazed), generally circular, but sometimes irregular; that persons with black eyes are particularly subject to this affection; and that the cure is to be accomplished by bandaging the diseased organ, and the application of the caustic solution.

Private William Halfpenny, æt. 32, 23d regt. was admitted, laboring under irregular, but clear, ulceration in the centre of either cornea, high vascularity of the conjunctival layer of these tunics, and granular lids. The caustic lotion was applied daily, and the lids kept shut by a bandage, under which treatment he soon was discharged from hospital, the ulcers being completely healed.

Private John Broughan, æt. 27, 23d regt., on the 21st of November, was admitted with central, but superficial, and glazed ulceration of the right cornea, which was superficially vascular, and the lids granular, the consequence of acute ophthalmia, contracted at Gibraltar. The same treatment was adopted, as in the last case, and the result was equally successful.

II.—That in purulent ophthalmia, when the discharge has nearly subsided, some œdema still remaining, but without pain, heat, or intolerance of light, absorption of a portion of the cornea often takes place, without any change in the surrounding texture, or symptoms manifesting the morbid process, which destroys the substance of the part affected, and gives rise to protrusion of the iris, thus distorting the pupil.—(See *the first part of the Cases of Byrne and Duffy, mentioned in* pp. 122-125.)

On the 22d June, Byrne was reported to be getting well, save that the lower part of the cornea, though clear, appeared pitted. On the 27th, the iris had formed a small protrusion through a small foramen in the situation of the depression above-mentioned. A lotion of caustic was dropped into the eye for a week; but the tumor, not subsiding, it was removed with a scissors, and a pencil of caustic applied, soon after which he was discharged (with an oblong pupil) to his depôt.

In Duffy's case, on the 4th November, the lower part of the cornea bore marks of ulcerative absorption, and on the 5th, a very small protrusion of the iris had taken place, slightly distorting the pupil, which in a few days retired under the daily instillation of the caustic lotion.

III.—That ulceration sometimes attacks the species of speck, section i., corneal opacities, p. 157, a case of which I shall now detail.

Private Robert Hivers, æt. 23, 63d regt. admitted May 17th, was discharged from hospital on the 24th July, where he had been treated for simple acute ophthalmia. On admission, he laboured under pricking pains of some duration, intolerance of light, and tepid lachrymation. He stated, that by exchanging the pricking pains for intolerance of light, he had been so affected for the last three weeks. Upon examination, a zone of minute vessels surrounded the cornea, which tunic was generally muddy, with two superficial specks, one in the upper, and the other on the lower segment. Calomel and opium were exhibited in full doses, which soon produced salivation, and a perfect cure followed.

IV.—That glazed ulceration takes place in chronic sclerotitis, where the cornea becomes dim and vascular, from thickening and softening of its texture, as in sect. x. of corneal opacities; and that mercury is the safest means of cure.

Private Edward Cahill, æt. 22, 3d foot, admitted August 28th, with general muddiness and vascularity of the right cornea, with a zone of vessels on the sclerotic, and a clear, though pitted ulcer on the inner side of the axis of vision, near the corneal border, without pain or intolerance of light; but attended with conjunctival vascularity. He was put on mercury, and when his mouth became sore, the ulcer healed.

V.—That ragged ash-colored ulceration of the cornea takes place in cases of asthenic conjunctival inflammation, not extending below the conjunctival layer; and that it is cured by stimulants.—(See *Cryer's Case*, p. 117.)

VI.—That in acute sclerotic inflammation, ulceration attacks the cornea, in the axis of vision, or to its outer side, the ulcer, thus formed, is generally ragged, circular, and though transparent at first, soon becomes ash-colored; and that stimulants increase the ulceration, and mercury arrests it.

Private Benjamin Francis, æt. 32, N. F. L. regt. was admitted on the 18th of December, 1826, with incipient symptoms of sclerotitis of the left eye. He was bled and purged, to which the sclerotic inflammation yielded; but some conjunctival relaxation remained, for which stimulants were employed. During their use all the symptoms returned, with a ragged ulceration in the centre of the cornea, and a deep zone of vesssels on the sclerotica. Mercury was now exhibited, which arrested the progress, and finally, unassisted by other means, cured the disease.

VII.—That in old and weak people, when free depletion is necessary to subdue active inflammation, the conjunctiva becomes relaxed, and the circumference of the cornea ulcerates in many points. The ulcers, thus formed, are apparently sloughy, but unattended with pain or intolerance of light. Stimulants are sufficient for the cure.—(See *the first part of the Case of McCarthy, mentioned at* p. 120.)

November 5th. Conjunctiva of right eye much relaxed, sloughy, but superficial ulcers have formed on the outer part of right cornea, without pain or intolerance of light. By the instillation of the caustic solution, he soon got well.

VIII.—That, in secondary attacks of acute sclerotic inflammation, particularly in weakly persons, pustules form near the corneal border, which terminate in ulcers, and heal by the exhibition of mercury.

Private John Ingram, æt. 40, of the 59th regt. was admitted on the 16th August with sclerotic inflammation, which was cured by mercury; but on the 20th September he had a return of the disease, with a pustule on the lower and outer part of the cornea. Calomel and opium were administered until he became salivated, soon after which he recovered.

IX.—That in the peculiar form of sub-acute sclerotis, mentioned at page 132, ulcers form near the corneal border, which, in the process of cure, become opaque from effused lymph, and vascular through the medium of conjunctival vessels. To be cured by mercury.—(See *the Case of Williams*, p. 132.)

Having said so much on the different forms of opacity and ulceration of the cornea, I shall now proceed to the consideration of its staphylomatous affections.

I.—That in purulent ophthalmia, the cornea sometimes sloughs, leaving the membrane of the aqueous humor perfect, which forms a protruding vesicle. To be cured by the application of caustic.

Private William Glenn, æt. 19, of the 63d regt., who lost his right eye by sloughing of the cornea, had this vesicular staphyloma, which was cured by the application of caustic.

II.—That when the cornea and membrane of the aqueous chamber are destroyed *in toto*, the iris protrudes, forming a staphyloma. To be first treated by the instillation of the caustic solution, and afterwards excision, and the application of the caustic in substance, if necessary.—(See *Byrne's Case*, p. 162; and *Duffy's*, in the same place.) But not unfrequently, when this affection has succeeded to gonorrhæal ophthalmia, the too precipitate use of the caustic will increase the sclerotic inflammation.

Private Michael Connor, 57th regt., arrived from Sheerness on the 2d November, labouring under the form of disease now described, succeeding to gonorrhæal ophthalmia. The caustic solution, and warm fomentations were employed, but so severe a form of sclerotic inflammation ensued, that it was found necessary to salivate the patient for his final recovery. When such tumors are large, occupying one-third of the cornea, puncturing them daily, with a couching needle in my hands, proved highly useful. By this practice the tumor is relieved from the distending force from within, and by the injury inflicted on the tumor, lymph is effused into its structure, by which its density and power of resistance is increased.

III.—That in purulent ophthalmia, the greater part of the cornea often sloughs throughout all its superficies, to this succeeds displacement of the lens and total prolapsus of the iris, which comes in contact with the remaining lamina of the cornea, which are unable to resist the distension from within; therefore, a tumor is formed of a blue color, and of easy compression. That such tumors, if left to themselves, generally produce great irritation, and grow still larger, but frequently the lens become absorbed, and the protrusion retires. In the first instance, the safest and most expeditious manner of treating this affection is by incision, thus evacuating the lens; but when it has grown so large, as to produce irritation, its complete removal is necessary.

In Rosiers' case, mentioned at p. 114, this elastic form of dusk-colored staphyloma formed in the right eye, but it again retired without any surgical operation.

In Lindsay's case, p. 121, this affection existed to a considerable extent, on the 15th November, when a section was made of the tumor, as in extraction, and the lens removed. The wound quickly united, and the protrusion receded.

Private James Pillet, 60th regt., arrived from Portugal on the 4th December, with the form of disease, now described, of nine months' duration; the outer lamina, particularly towards the base, having got pretty firm and thick. Excision was performed, and a rapid recovery followed.

V.—That in chronic ophthalmia, or leucomatous cornea, the consequence of purulent disease, lymph sometimes becomes deposited and organzed in the diseased cornea, so as to form a solid conical projection, which never amounts to the size of the last-mentioned form of disease; therefore, not frequently requiring removal, of which I could relate many cases.

I shall now proceed to offer some general observations on the matter contained in the preceding pages.

Those, who contend for the universal existence of pain, heat, redness, and swelling, in inflammation, must either have had very scanty opportunities for observing clinical practice, or else have made but indifferent use of their time; for, as proved by the foregoing pages, we need not go beyond the range of ophthalmic surgery, to be convinced to the contrary. But it is an error of no less magnitude, to suppose, that depletion is necessary, to subdue all forms of inflammation, the opposite course being imperative in many cases,—a fact, amply proved by this report. Therefore, we must conclude, that inflammation varies in its nature,—even in the same tissue; and, for its safe management, each species must be carefully distinguished. What, then, can be more absurd, than to hear one man recommend depletion, and another stimulants, in all forms of conjunctival ophthalmia? Upon this subject I shall forbear to comment; suffice it to say, that I have destroyed and injured a great many eyes, by depletion, which might have been saved by an opposite plan of treatment; and, on the other hand, I have committed the same errors with caustic, and other stimulants; but, through these mistakes, I have been enabled to arrive at truths, which, without its aid, I should never have reached; and these I have endeavored to relate in the most plain and simple manner.

After the ground I have gone over, it would be useless to particularize more. It is enough, here to say, that when depletion becomes necessary, as marked in any of the species of ophthalmia, before mentioned, I prefer taking as much blood at once, as the patient can bear. I am aware, that many able practitioners have deprecated the large bleedings practised by some of our army surgeons, in the Egyptian campaign. Nevertheless, the authority of Dr. Vetch, and a host of other members of the British Medical Staff, has an importance, so strongly felt by men of science, that a better organized opposition becomes necessary, before the impression can be removed. It has been said, that though from fifty to seventy ounces of blood are abstracted, and syncope supervenes, the conjunctiva thus rendered pallid, soon after the commencement of re-action, becomes afresh overloaded with blood. This, no person can deny, nor does any intelligent pathologist suppose, that, by a full bleeding, carried to syncope, he permanently destroys the hyperemic condition of any mucous membrane; but where is the intelligent physician, who, if called to a plethoric young man, laboring under acute catarrh, would not perform venesection, quickly and largely too. The fact is, that a small bleeding, cannot make any marked impression on an acute form of ophthalmia, as the practice of those, who oppose full bleeding, sufficiently proves. Do we not see those practitioners compelled to repeat the operation daily, or every other day, until their patients become nearly exsanguinated? If patients, thus treated, even got cured of their ophthalmia, at the expenditure of health and strength, thus incurred, their physicians would have more reason to be proud of their practice. But it is otherwise; for, under this temporising plan, granulations sprout out from the lids, and from the atony of vessels, the cornea not unfrequently begins to ulcerate. These facts, I have convinced myself of, by carefully examining the soldiers laboring under chronic ophthalmia, sent from foreign stations. Those regimental surgeons, on the same station, who bled largely at the outset of the disease, *ceteris paribus*, sent home the fewest invalids, and those, whom they did send to the general hospital, arrived with less extensive disease, and more vigor of body, than those sent by surgeons, who were in the habit of practising small and repeated bleedings. In conclusion, I shall merely observe, that in the latter end of the year 1826, the cases of acute ophthalmia were unusually severe, particularly among the soldiers of the 67th regt.; they were, for the most part, cases requiring antiphlogistic treatment. Those whom I bled largely were soon discharged to their duty, but little debilitated; whereas, the few whom I treated by moderate bleedings, were much longer in hospital, and lost, beyond all comparison, much more blood.

When depletion is necessary, as marked in any of the species of ophthalmia before mentioned, I prefer abstracting the blood from the temporal artery; for I am wedded to the old opinion, viz., that arteriotomy, in ophthalmia, is equal to general and local blood-letting, and that syncope is induced by a smaller evacuation of arterial than venous blood; therefore, that all the benefits resulting from blood-letting are thus obtained, with the least possible debility. While on this topic, I must say, that I cannot assent to the statement, made by some authors, viz., that when the trunk is divided, the branches must carry more blood. Hence the congestion is rather increased than otherwise. I shall mention one pathological fact, which must convince any impartial man of the futility of this position. If a person, with a phlegnon on his foot, has his femoral artery tied, does the phlegnon, therefore, contain more blood than before the operation? It cannot be denied, that after the ligature of the femoral artery, or the division of the external temporal trunk, the collateral branches become enlarged, so as to convey the blood that would otherwise pass through the injured trunk, to the distant parts; but it is no less certain, that the vessels of these parts do not carry more than their usual quantity, the alteration in the circulation consisting in the route by which the blood arrives at its destination, for the purposes of nutrition, &c. Others object to arteriotomy on the ground that it is likely to be followed by hemorrhage and aneurism; but as I have shewn in my essay, published in the *Lancet*, these disagreeable consequences need not be feared, provided the operation be conducted as there described. Others again say, that the bandage applied, to secure the vessel, prevents the application of remedies to the temple. This, I am ready to admit, is a serious objection, where the surgeon is addicted to leeching, cupping, blistering, anointing, &c., the temples; but it does not hold good in my practice; for I neither blister nor anoint these regions, and certainly, when I divide the temporal artery, I consider the object of local blood-letting as attained.

When stimulants seem suited to the form of ophthalmia about to be treated, I generally prefer solutions of caustic, and the sulphate of copper; the former, I think, is better fitted for black and brown eyes, and the *latter* for gray and blue. I have made a great many essays to determine the proper strength of these solutions, and have satisfactorily ascertained, that five grains of caustic to an ounce of distilled water, and twenty grains of copper to the same quantity of water, form the best lotions for ordinary use. I have repeatedly used the caustic solution much stronger,—even in the proportion of a scruple to an ounce; but I have seen the worst consequences ensue,—to wit, actual opacity of the cornea produced by its chemical action, severe sclerotic inflammation, and the most dreadful form of purulent ophthalmia.

This report abounds with direful examples of sclerotic inflammation having succeeded the too precipitate use of stimulants, after the removal of acute symptoms. Therefore, it seems better to err on the safe side, than run the risk of establishing a disease of serious importance.

I have given the vinum opii, liquor plumbi, sub-nitras hydrargyri, red precipitate, and tobacco, a fair trial; and am satisfied, that though they are all serviceable applications, still they may advantageously give way to those already mentioned. Nevertheless, I must confess, that I have seen some cases of scrofulous ophthalmia, with incipient corneal disease, where the vinum opii, holding in solution the oxymuriate of mercury, appeared most beneficial, and others again where it had excellent effects, when applied by itself; but, for the most part, the oxymuriate of mercury seemed to afford additional benefit. In the year 1826, I used the liquor plumbi extensively, and had every reason in my report for that year to speak highly of it, as an astringent and stimulant, in conjunctival inflammation; but a disadvantage attending its use, which we should bear in mind, consists in the disposition it has to form incrustations or deposits on the conjunctiva and cornea; particularly if abraded; for then the adhesion becomes so firm, that it cannot be broken up without injuring the eye, and the patient is thus compelled to submit, perhaps to imperfect vision, and, at all events, deformity. I have also used extensively, and very advantageously, in purulent ophthalmia, the infusion of tobacco, combined with the oxymuriate of mercury; but in every case, where it was admissible, I have thought that the caustic or copper would have acted equally as well, and in many much better.

In all forms of sclerotic inflammation, no matter how complicated, it will appear I have salivated my patients, because I am firmly impressed with the belief, that depletion may be carried to a great extent, and not destroy the inflammation; and I can maintain, that I never yet saw a form of sclerotic inflammation that did not subside, when the mouth became affected. In some instances it may be necessary to have recourse to bleeding, but the cases demanding it are few, and are such as are attended with intense pain, and high fever,—perhaps, also, with central ulceration of the cornea, in robust and young people. In these cases the abstraction of blood relieves the pain and fever, and suspends the inflammation until the mercury takes effect. When I find it necessary to exhibit mercury, I give it in five-grain doses, with half a grain of opium, every fourth hour; and generally twelve doses are sufficient to salivate the ordinary run of men. Some people think that it is not necessary to produce salivation, to insure impregnating the system with mercury; but I can only say, that I have never seen any good effect from the remedy yet, in any form of acute ophthalmia, when the mouth was not affected. In some of the cases of purulent ophthalmia which I have related, it appears that mercury of itself, pushed to salivation, has been successfully employed; and I have no hesitation in saying, that, in acute purulent ophthalmia, attended with great pain, heat, and hard tumefaction, no matter by what cause induced, this remedy, preceded by arteriotomy, if the patient can bear it, will prove most effectual. At least, in my hands, it has done so.

I have found cathartics beneficial in almost all cases of acute ophthalmia; but to them alone I have never trusted. Those, in common use, have been calomel and jalap, and the purging mixture of the hospital, composed of senna and epsom salts. I may here mention, that I have tried them as revulsives; but without success.

I have used tart. ant. in many cases of acute rheumatic and purulent ophthalmia. In the former, I have never seen it do any good; and I have no doubt but that in the latter I carried it too far, particularly in the case of a lad of the 63d regt., named Trance; for at that time I was impressed with the idea, that the cornea would not have sloughed, but for the general debility produced by this medicine, as the symptoms were beginning to mend, and the cornea appeared clear, when suddenly he became weak, and this tunic sloughed.

I have frequently given a patient four grains of this substance five minutes before the performance of venesection or arteriotomy, and am inclined to believe, that vomiting and syncope have been induced, upon less abstraction of blood, than if it had been omitted. Therefore, I have been led to consider it a powerful agent after this manner.

As stated in a previous part of this Report, there is a species of acute ophthalmia, which is best treated by emetics.

It appears that in many cases I have used blisters in acute ophthalmia, after blood-letting had been freely practised, and I am inclined to attach much importance to them at such periods. In all forms of acute conjunctival ophthalmia, they lessen the pain and intolerance of light; in pure ophthalmia, the lachrymation; and in purulent, the ichorous discharge. I have applied blisters of different sizes to the eyelids, temples, behind the ears, and the nape of the neck. I have tried the effect of keeping the blistered surface discharging, by stimulating applications, and I have also tested the efficacy of a succession of blisters on the same place, and on the different places, heretofore mentioned, beginning from before backwards, and from behind forwards. From these trials, I have arrived at the following conclusions—1st. That blisters are most efficacious, when applied to the nape of the neck. 2d. That the blistered surface should be six inches by four in the adult, and hold the same proportion, according to the age of the subject, not yet arrived at maturity. 3d, That a succession of blisters is preferable in acute ophthalmia, if it is deemed necessary to continue the counter irritation; and 4th, That in the protracted disease, to which scrofulous children are liable, it is most advantageous to keep the blister discharging, by savine or some other other stimulating ointment.

Scarification and excision of part of the conjunctiva, I have not, during the past year, practised in hospital; but I have given them a fair trial amongst the poor, who sought my assistance. And, without hesitation, I must say, that the violence inflicted, generally increases the inflammation; that granulations are produced rapidly in the tract of the different incisions, and that the effusion of blood is but scanty; for, if the lids are not kept constantly everted, coagula form in the wounds, and this very eversion tends to repress the hemorrhage, by compressing the vessels leading to the incisions.

Almost every private practitioner, many hospital surgeons and professed ophthalmologists advocate, and indeed lay great stress upon, the application of leeches in acute ophthalmia, and nothing at first sight appears more correct, than the propriety of abstracting blood from the neighbourhood of the organ over-distended with this fluid. Hence, we see surgeons every day order leeches,—one directs six to the temple; another, *a la Demour*, two or three to the conjunctiva; and the same precious plan is pursued day after day, until purulent discharge is established, or the cornea ulcerates. Then the practitioner talks of the intractible nature of the disease, and tells you, with a deep tone and philosophic demeanor, that he has applied so many dozen leeches, partly to the temple, and partly to the conjunctiva.

On this subject, I would beg to observe—1st. That I have never seen leeches, when applied to the conjunctiva in acute ophthalmia, of any use; and I could cite many cases, where, from the eversion of the lid during their application, the injury which they inflicted on the conjunctiva, and the friction produced by the scabrous condition of the lids, resulting from their bites, had, in irritable subjects, induced a great exacerbation of disease.

2d. That the hemorrhage, from the action of leeches, amounts to but little. First—because, from the irritable condition of the majority of patients, the leeches are not allowed to fill themselves: Secondly—because, even when the patient is obedient and tranquil, the leeches sicken, work slowly, or fall off soon. This is particularly the case in purulent ophthalmia. Thirdly—because, when we endeavor to evert the lid, to admit the entrance of the leeches, the spasmodic affection of the orbicularis in the majority of cases, produces ectropion; however, this may not take place until the leeches have fastened; but no matter whether it takes place before or after this event, the effect is the same,—that is, the vessels become strangulated during the period of evertion, and consequently the flow of blood is checked. Fourthly—after the leeches fall or are taken off, a portion of the blood is effused into the sub-mucous cellular tissue, and the coagula thus formed, block up the bleeding vessels, and stop the hemorrage. Fifthly—if the lid be kept everted, after the leeches are removed, the bites they have inflicted can bleed but little; because the trunks, which give rise to the bitten branches, are strangulated by the pressure of the proximal side of the tarsal cartilages, and the slowness of the efflux thus induced, enables the grosser parts of the blood to adhere to the bitten surface, and by their accummulation to form coagula. Sixthly—if the lid be not everted, the bitten surface is brought in contact with the globe, and by the pressure of the orbicularis, which on such occasions is generally increased, the hemorrhage is as completely stopped, as if we were to place our fingers on the bites.

3d. That, in acute ophthalmia, six or twelve leeches to the temples can have but little effect; they may please the patient, but cannot make any useful impression on his disease, even though they are repeated day after day, until dozens and dozens are applied. To be short, I have never seen any advantage from them in the healthy adult, unless when applied according to circumstances from two to four dozen at a time; but the same advantages can always be obtained, easily, surely, and promptly, by arteriotomy. Perhaps in the wealthy, who do not wish to submit to the latter, we may employ the former; but the poor man, and hospital patient, may, with justice and propriety, undergo the operation of arteriotomy.

4th. In persons whom I thought fit subjects for local blood-letting, and who were unwilling to submit to arteriotomy, I have, I think, seen as good effects produced by half a dozen leeches to the mucous membrane of the nose, as from two dozen applied to the temple. This, I think, is worth considering, when the person afflicted does not labor under a severe form of disease, and his means are scanty; but if the disease be of a very aggravated character, a sufficient number of leeches cannot be applied to the mucous surface of the nose, so as to produce any decided effect. However, in the very worst form of the purulent ophthalmia of infants, a leech or two applied to this surface, is often followed with decided benefit, as may be seen by referring to p. 127.

Cupping the temple, is, for the most part, worse than an idle practice. It has two effects; it serves to satisfy the dogmatic physician, and to pacify the querulous patient at the expense of a mangled head,—a memorial of the physician's skill, the cupper's dexterity, and his own suffering. It is curious, indeed, how some men, who should know better, will still continue to harp about the advantages of cupping the temples, in ophthalmia; whilst others—to be sure, of no great importance in the republic of science—pester us with their experience, as if they ever had any worth mentioning, were capable of properly appreciating any moderate opportunities, or able to do more than merely confirm the most common-place axioms in medicine. The former class of men ought not to permit us to believe, that they are ignorant of the application of pneumatics to the living body, that they are unacquainted with recent physiological experiments, and the vascular connexions of the eye; whilst the latter class ought to extend their experience, and see, if it would not convince them, that the cases, which they supposed were so materially benefitted by cupping, did not actually get well in spite of bad practice. Has not Hufeland, the most renowned of the learned and all-wise physicians of Germany, told us, that, from thirty years extensive practice, he has convinced himself that one-third of human maladies get well under improper treatment; and does not the whole tenor of the *Organon* of the ingenious Hahnemann, when coupled with our physiological knowledge, prove, beyond all manner of doubt, that the mass of diseases get well when left to themselves,—nay, even in spite of empirical means, unwisely directed to combat them? But to end this subject, let not the occulist suppose, that because his patients recover from ophthalmia, they do so because they are cupped. He, in truth, deserves no more credit for their recovery, than the physician, who purges his patient from the beginning to the end of fever with calomel and jalap. Both class of patients recover in spite of their medical attendants.

There have been endless disputes about warm and cold applications in ophthalmia. Nevertheless, I see no difficulty in theory, nor have I found any obstacle in practice, opposing the reception of both, as useful agents. Cold applications are certainly useful in pure conjunctival ophthalmia, possessing the characters mentioned in sect. ii. p. 116. It has been objected to them, that they excite re-action; but this certainly is an advantage, as re-action is the one thing necessary before an eye, so affected, can return to its pristine vigor. Spring water is the remedy I am in the habit of using, when I consider the application of cold necessary. When, from the complaints of the patient, and the appearance of the eye, I am convinced that the inflammation is of a sthenic character, and extends, or is likely to extend, to the sclerotica, warm applications are very serviceable. In such cases, I desire the patient to hold his head repeatedly over the vapor of warm water, impregnated with camphor and opium, and in the interim to cover the eye with a fold of warm flannel.

When the aqueous humor has increased in quantity, from the inflammation extending to the interior of the eye, or when the muscles are affected with clonic spasm, I have frequently punctured the cornea with a cataract needle, evacuated a part of the aqueous humor, and given great relief.

In some few cases of passive conjunctival hemorrhage, giving rise to diffused ecchymoses, I have promptly prevented further extravisitation by touching the large trunk or trunks, leading to the place of effusion with a point of caustic, so as to effect a diminution of the calibre of the vessel or vessels touched.

All my patients, who labored under acute disease, were kept on low diet, consisting of a small quantity of milk, bread, and gruel.

Here it is necessary to say a few words on chronic ophthalmia.

The cases that have been treated arrived from other stations; and the most common affections were granular lids, and opaque, ulcerated, and vascular corneæ. The sulph. cupri. was the remedy principally depended on, for the removal of the granulations. It was generally applied twice in the week, or otherwise as occasion demanded. In no case was it applied, so as to discolor deeply the granulations, or draw blood; the lids were besmeared with oil immediately after its removal, and the eye bathed in cold water. On the intermediate days, a solution of caustic, or sulphate of copper, was dropped into the eye, and proper attention to the state of the health and habits, strictly enforced. This plan of treatment appeared more successful than either separate, and cured many a hopeless case. I have oftentimes substituted the ointment of the nit. argent. for the solution in these cases; and though better fitted to this, than acute ophthalmia, still I have not been led to form so high an opinion of it as the solution. What does this arise from? Is it because it cannot be so equally distributed over the conjunctiva? However, the solution of the question is of no great import.

I have no doubt but that excision of granulations, if not a bad, is, at least, a useless practice;[*] for we possess a remedy in the blue-stone, not to be surpassed by any other, in such cases; but, to insure success, it should be lightly applied, with the restrictions before laid down; for, if it be rubbed, so as to produce a slough, high inflammation ensues, the cornea suffers; and, after all, the granulations grow faster than ever. When the disease of the lids is removed, generally the muddiness and vascularity of the cornea subsides; as the former, in the common run of cases, depends on sub-conjunctival effusion, and the latter has its seat in the body of the conjunctiva itself. It is my opinion, that when some authors speak of chronic sclerotitis, in *all* these cases, they are in error, though in some this affection really exists; but when it is so, the body of the cornea becomes opaque and vascular, and the vessels encroach *en masse*,—not scattered, as is the case in the common affection; and often this sclerotitis takes such deep root, that though the exciting cause be removed, mercury becomes necessary for its cure.

I have tried oftentimes the practice of cauterizing and dividing vascular trunks, and even excising part of them, leading to diseased corneæ, but without benefit; for I have ascertained, that the collateral vessels carry the blood to the same destination. Therefore, I must denounce against this practice.

I am convinced, that after we have nearly reduced the granular condition of the lids, the less we interfere with the diseased organ the better. In fact, nature, at this period, requires but little assistance; and I doubt not, but that many cases are daily protracted by the instillation of solutions of caustic, copper, vin. op. &c., and of this mal-practice I was at one period guilty. Now I do not make applications to convalescent eyes more than once in the week, or even more seldom, and my success is much greater than when these were repeated daily.

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[*] When excision is practised to any great extent, the cicatrices which result therefrom, exercise a degree of friction on the globe, which seldom fails to induce, or, at least, keep up an irritation, that, but too often creates incurable disease—opacity, vascularity, and ulceration.

In the page 172, I spoke of the advantages of puncturing the cornea in certain forms of acute ophthalmia; but however advantageous it may be in such cases, it is still better adapted to those of chronic disease, where a portion of the outer layers of the cornea has been destroyed by sloughing or ulceration. In such cases, the remaining portion of the cornea offers but a slight resistance to the aqueous humor pressed forward by the contraction of the recti muscles, and the consequence may be rupture, and consequently prolapsus of the iris,—a calamity which may be avoided by timely puncture, thus diminishing the pressure from behind, partly by removing the spasm of the muscles, but principally by lessening the quantity of the aqueous humor.

When the corneal deposits have been recent and extensive, I have frequently endeavored to excite their absorption, by exhibiting repeated emetics. Still, I think that the general exhaustion thus induced, together with atony of the diseased vessels, more than counterbalances any good arising from them. I have never observed any benefit to accrue from counter irritation in such cases.

When I first took charge of the Military Ophthalmic Hospital, I was in the habit of keeping all my patients, laboring under chronic ophthalmia, on low diet; but I soon discovered that I was thus protracting the disease, and, from the most ample trials, became satisfied that the statement of my predecessor, Mr. Melin, was perfectly correct, viz.,—that when the lids are granular, and the cornea opaque and ulcerated, the diet of the patient ought not to be curtailed. I could cite many cases where, in spite of my best directed efforts, the cornea continued to ulcerate until the patient's diet was improved, and even a pint of porter allowed daily. It must not be hidden, however, that many of the soldiers, thus afflicted, were considerably debilitated,—some by service in tropical climates, and visceral disease thus contracted; and others by repeated bleedings, low diet, and other depleting means, used in the outset of their disease.—(See p. 166.

I did not allow any of my patients, laboring under this chronic malady, to wear shades. 1st. Because I found that the circulation of pure air about the eye considerably increased its tone, and thus proved a powerful auxilliary to medical treatment; and, 2d. Because I confirmed the opinion, before current, viz.,—that, by shutting out the eyes proper stimulus (light), great irritability or intolerance of light was created.

Finally, during the heat of the day, and in damp weather, I did not permit my patients to leave their wards, and under this discipline I ascertained, that the cures were more rapid, and relapses less frequent.

EDITOR.

[*To be continued.*]

REVIEWS.

Observations on the Prevention and Cure of Hydrophobia, &c.—By Dr. Joseph Leo-Wolf, M.D. G. & C. & H. Carvill, New York, 1831.

This Essay is divided into two parts. The first contains some judicious remarks on the pathology of hydrophobia, by Dr. W.; while the second is a correct translation of a circular, published by the Prussian Medical Department, on the symptoms and the method of preventing canine madness.

After making some general, yet pertinent observations, on animal poisons, Dr. Wolf proceeds thus:—"A poison like that of hydrophobia, which is capable of destroying all vital action of mind and body, in young and old, in weak and strong constitutions, and which even retains its power in the dead bodies of men or animals, who have fallen its victims; such a poison cannot certainly be obviated in its effects by slight remedies. On the other hand, a violently reducing treatment, by bleeding, purging, &c., which often fearfully exhausts the vital energies, might justly have been dreaded in these cases; since, thereby, the system is quickly and fatally robbed of the vigor it so much requires to re-act against, and expel the poison. I do not mean by this, to deny the good effect sometimes obtained by a reducing system under similar circumstances, where, also, depressed vital powers constitute the characteristics of the disease. But, in such instances, this method operates indirectly, balancing the vital powers in a manner often unknown and unaccountable to us. Such a course can certainly but be injurious, when we have to counteract a poison which increases every moment in its tendency to paralyze all vital action."

The Doctor then recommends the application of leeches to the spine, followed by vesicatories, or in severe cases, by the white hot iron. At the same time, he says, "I should try the '*endermic method of medication*:' with the aid of a white-hot iron or a vesicatory, I should make a blister on the upper part of the arm, about half an inch in diameter, remove the epidermis, and apply to the skin half a grain of *Strychnine*, covering it with adhesive plaster. This remedy should thus be applied three or four times a day. The blister along the spine must be kept open; and for the greater security of the effect of the *Strychnine*, it might, at the same time, be given internally, ⅛ to ¼ of a grain every third hour, provided the patient is yet able to swallow. If the affected person have a weak constitution, or if the disease has already attained its higher degree, I should desist from applying the leeches, but apply the two blisters along the spine, keep them running, and administer the other remedies just mentioned, to a still greater extent. It is almost superfluous here to mention, that the place where the poison has originally been deposited by the bite of the rabid animal, must be treated strictly in accordance with the annexed preventive advices, however long previously the wound may have been healed. Even after all symptoms of the disease have ceased, I should still recommend the external use of the *Strychnine* to be continued, until its injurious effects should be developed.

"In case the external and internal use of *Strychnine*, even in the greatest dose, should prove equally as unsuccessful as the *Morphine*, so much praised, I then should warmly recommend the internal use of *Cantharides*, in powder, from two to ten grains, and even more, given every other hour. I cannot conceive any cause for the discontinuance of the experiments with this important remedy, which, some twenty years ago, the meritorious Professor Rust found so successful in some cases of this kind, during his practice in the hospital of Vienna. It is certainly much in favor of this remedy, that in the cases just alluded to, the most enormous doses have been given, without creating any of those symptoms, which, under other circumstances, may be produced by a few grains. The *Cantharidine*, which, to my knowledge, has not yet been used, might, perhaps, be tried with success against hydrophobia; for, like all other *alkaloids*, it concentrates the power of the original substance to a very great extent, and one-eight of a grain may be as powerful as ten grains of *Cantharides*. The external application of this new remedy might also be used instead of the white-hot iron, and create the desired blister with equal rapidity."

In case the remedies, now mentioned, fail to produce the desired effect, Dr. W. advises the exhibition of the *Daturine* and *Atropine*; particularly of the former—1st. Because of its good effects in many chronic diseases of the nervous system; and 2d, Because its poisonous effects are marked by mental derangement, and an augmented action of the sexual organs, "showing a relation between the disease before us, and this remedy. Another point in favor of the *Stramonium* and *Belladonna*, which may contribute to show this close connexion between the disease and the remedy, is, that in health, they both cause an inflammation of the throat, with thirst and dryness, and the use of the *Stramonium*, also, a tenaceous spittle; these facts prove that they affect in a particular manner, the *nervus vagus*, and its connexion with the *fifth pair of nerves*."

Our author seems to think that all the symptoms of this dreadful malady prove, that the spinal marrow is the seat of the disease. However this may be, though the Doctor does not quote any authority in support of his position; yet we know, that the same opinion was firmly sustained, some fifteen years since, by Dr. Reed, in his elaborate work, on *Tetanus and Hydrophobia*.

Dr. W. concludes his remarks with a few observations on *Arsenic* and the *Chloride of Gold*, which we do not deem sufficiently important to insert here.

The first chapter of the Prussian circular treats of the symptoms of madness in dogs; the second, of the symptoms of hydrophobia in man; the third, of the treatment of persons, who have been bitten by mad dogs; and the fourth, of the means of preventing madness in dogs, and how to act, in case they run mad.

We shall pass over the first and fourth chapters, though highly interesting; because our limits are so restricted, as barely to permit the insertion of the other two, which are of such high importance, that we feel we would not be doing justice to our readers, if we attempted to curtail them.

"*Symptoms of Hydrophobia of men after the bite of a mad dog.*

"Every wound, be it ever so small, inflicted by a rabid animal upon men, may cause the unfortunate disease of hydrophobia. Even being licked by such an animal on a scratched or wounded part, or on one, which is covered with a thin skin, but still more a bite, however small, may have this effect.

"The slightest injury by a mad dog, or another mad animal, should therefore be considered as of the greatest importance, and every thing recommended in the following chapter to obviate its effects, should be done. The place of the wound, be it in the head, belly, arms, legs, fingers, or toes, makes no difference; neither does age or sex afford any security. All kinds of dogs are equally liable to this disease, and are equally able to infect and poison men. The infection from the bite of a rabid animal is manifested at different times; some persons may be attacked by hydrophobia within a few days, others within some months, and others even not before some years have elapsed.

"No one, therefore, who has been wounded by a mad dog, or by a dog merely suspected of being mad, should consider himself secure against this fatal disease, unless he has pursued all measures necessary after the bite, even if months and years should have already expired since he received the wound.

"The following symptoms prove the actual infection, and indicate the poison of the dog to be assimilated with the fluids of the human body:

" The spot, originally injured by the dog, begins to be painful; this pain soon increases and spreads all over the part.

" The inflicted wound, which often heals within a few days, and without any remedies, assumes a red appearance, and becomes inflamed, and sometimes covered with small pimples. It not unfrequently re-opens with the discharge of a thin and corroding matter.

" The patient shows a remarkable change of his spirits, and is either unusually happy and gay, or displeased to work, uneasy, gloomy, sighing, &c.

" He loses his appetite, sleeps restless, is disturbed by frightful dreams, and complains of chills and heat.

" His uneasiness gradually increases, and he has a distressing appearance. He suffers violent thirst, but detests all kinds of fluids which may be offered to him, and all things which have the least resemblance to them, such as polished or shining cups, &c. This symptom always increases with the disease.

" He soon is unable even to swallow dark fluids, for instance, beer, which, at the time of his shunning the water, he felt yet inclined to take, and at last he even cannot swallow dry and solid food.

" A draft of air now causes an unpleasant sensation, and therefore he even dislikes to have the door of his room opened, or to see people approach his bed.

" He breathes with difficulty, is asthmatic, and groans in a manner, which has been considered similar to the barking of a dog, although quite superstitiously.

" His saliva becomes tenacious, and he casts it out with great difficulty, although large quantities of it collect in the mouth, and run out of it. After he loses his mind, he spits at all persons who approach him.

" He now becomes delirious, his eyes look wild and staring, and he rages furiously at intervals.

" Finally, he is seized with convulsions, and thus, generally within three days, expires in a most miserable and lamentable condition.

" *Treatment of persons who have been bitten by a mad dog.*

" All the shocking sufferings, heretofore mentioned, may happily be prevented, if the necessary precautions are immediately taken with such persons as have been bitten or injured by a rabid animal, or by one suspected of being so. Every body will conceive the importance of immediately pursuing these measures without delay, with a person thus wounded. The most important step is to send immediately for a physician or surgeon, and every one, who feels for his fellow-men, will do so, in order to save the sufferer from an imminent and shocking death. Every physician or surgeon is legally bound to offer his assistance instantly, as there are but few cases, where an immediate medical assistance can be of greater importance with regard to the hope of a happy result, than in this:

"Meanwhile it is necessary to inform the authorities of the accident as early as possible, to enable them to make such arrangements as to prevent further accidents. All the annexed mentioned measures should however be followed, without frightening or alarming the patient, and every thing should be done to comfort him by friendly conversation, consolation, &c.

"The prevention of hydrophobia from those persons who have been injured by a mad dog, depends principally upon removing the poison out of the wound and to obviate its spreading through the body from thence. *Therefore the only secure way of saving the patient from a miserable death, consists in an early and persevering external treatment of his wounds.* If this is neglected, no internal remedy can prevent hydrophobia, whatever may be its name, and however great its reputation may be. The most melancholy cases have long ago convinced all experienced physicians of the truth of this assertion. Whoever therefore induces such patients, to use those remedies, which have formerly been considered popular or secret, and have been respected as such by a few credulous persons: and to neglect the only safe external treatment of the wound: such a one has to experience the consciousness and mortification of having essentially contributed to the patient's death.

"But as the poison often spreads from the wound rapidly over the body, and then, generally, no further help is possible; therefore even the time, while the physician is called, should not pass without service to the patient. The following course should be pursued under such circumstances:

"If the injured part have been covered with clothes, they must be taken off, but cautiously; for the slaver of the dog, attached to them, may act as a poison, if coming in contact with a sore finger or another wounded part, nay even, if touching the skin. Such clothes should instantly be burnt, or hidden deep under ground.

"The wound must bleed well, and nothing should be done to staunch it suddenly; therefore no bandages or compresses, no pressure, &c. On the contrary, it ought to bleed for some time, and must be washed or bathed with warm water, to assist the discharge of blood. In case the wound should have dried already in some places, it must be lanced* to cause a new discharge of blood.

"If a person is bitten in the field, in the woods, or in any other solitary place, he must instantly wash the wound with water, or in want of it with his own urine, and must support the bleeding as possible; this will be partly aided by pressing the blood towards the wound.*

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* "The incision should be made from the circumference at a distance to the centre, and not from the centre, by which manner the poison would be made mechanically to spread; also, dry cups should be applied to the wound, in order to extract the poison with the blood. "J. L.-W."

"Then the patient must walk to the nearest dwelling, or be carried there, but slowly, as it is injurious to him to be excited. The wounds and the most trifling scratches must now be washed carefully with ley or warm water saturated with salt.

"If no physician has yet arrived, from one to four drachms of Spanish fly-powder are sent for, according to the number and size of the wounds; all of them must be covered with it, and then a linen bandage is to be applied.

"Where no Spanish flies can be had, ashes or quick-lime, or, at least, common salt must be used in their stead. The trifling pain in the wound, caused by these remedies, has no bad consequences, and is necessary, as they destroy the poison deposited there, and cause, by its inflammation and suppuration, the only safety against the eruption of hydrophobia.

"All rags, linens, bandages, sponges, &c., which have been in contact with the wound, must be burnt immediately after being used, else the poison might thereby yet infect other persons.

"This being all done, the patient may compose himself. He should, however, not see many persons, nor should he hear of any disasters, caused by mad dogs. All kinds of heating fluids must be avoided, such as brandy, wine, coffee, &c. His room ought not to be too warm, and constant consolation and encouragement is necessary, that he may compose himself and recover both in mind and body.

"When the physician or surgeon has arrived, the patient should, with firmness, patience, and perseverance, submit to his prescriptions, of whatever kind they may be, recollecting that every thing is intended for his good, and the preservation of his life.

"If any of the precautions, before mentioned, have been neglected or not sufficiently long continued, the patient cannot be considered as safe; for within a longer or shorter period the fatal disease of hydrophobia, may still appear. Its symptoms are faithfully laid down in the second chapter.

"In such a case no time should be lost, and every thing should still be done with the same precision as if just at that moment he had been bitten.

"As soon as a person, who has been wounded at any time previous by a mad dog, or another animal, suspected of being rabid, begins to complain of fresh pain in the injured part, either suddenly, without apparent cause, or after having been angry, frightened, excited, heated, &c.; or if the cicatrix of the old wound assumes an unusually red appearance; or if the spirits of the person change either into liveliness or uneasiness and anxiety, with a difficult respiration, unnatural lust, and frightful dreams and imagination; then a physician or surgeon should immediately be sent for, and all circumstances mentioned to him.

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* "If the bitten wound is in a limb, a strong ligature round it, by the aid of a handkerchief, string, &c., may be very useful, if applied above the wound. The absorbing vessels being mostly near the skin, such a ligature may prevent the momentary absorption of the poison, and may thus forward its removal out of the wound.

"J. L.-W.'

"Until the arrival of the physicians, the shavings of horseraddish or crushed onions, must be applied to the cicatrix.

"Still better is it to lance it carefully by a few cuts, and, in case of its bleeding, to support and increase this by bathing the part in warm water.

"After the wound has ceased bleeding, and the physician has not yet arrived, it must be dressed with Spanish fly-powder, or with powdered quick-lime, or common salt, as has been stated before. In short, such a person should be treated as if he had just been wounded by the dog.

"After the symptoms of hydrophobia have appeared, and the patient is deranged, and rages as such, he should never be left alone, or without help; but neither be imprisoned, as ignorant or cruel persons would advise; but he should be nursed by judicious and courageous men, who may compose him by friendly treatment, and obey the physician's prescriptions. But, if he has lost all reason, and is unmanageable, they may tie him with handkerchiefs, so that he cannot do any injury.

"Those, who attend a hydrophobic patient, need not to apprehend any danger. If the patient spits at them, they mush wash it off instantly, and unless they eat or drink out of the same spoon, glass, plate, &c. with him, they may attend without fear to their duties in assisting their unfortunate fellow-man, and in mitigating his shocking sufferings as much as is within their power.

"After the patient has died of hydrophobia, all parts of his bed, and every thing, which has been infected with his saliva, as handkerchiefs, glasses, plates, &c., must be burnt in a remote spot, or must be interred six feet below ground, and covered with quicklime. Metal utensils, as knives, spoons, &c., which have been in contact with him, must be thoroughly heated, or should likewise be interred."

We shall terminate, by observing, that Dr. Leo-Wolfe deserves the thanks of all who are concerned, either in preventing or meliorating disease, for his philantropic conduct, in placing before the American public, in the English language, the valuable documents circulated through Prussia, by the Department of Medical Affairs. With regard to the plan of treatment which he proposes, experience has proved that a great part of it, at least blood-letting and counter-irritation in the course of the spine, and the exhibition of narcotics, are not likely to be attended with success; however, his appeal to the alkaloids, merits notice. Finally, we are not disposed to censure the Doctor, for his too sanguine expectations,—on the contrary, we are always more disposed to peruse those writers, who see—

> "Tongues in the trees, books in the running brooks,—
> Sermons in the stones, and good in every thing,"

than those smell-funguses, who survey NATURE with perfect apathy, and whose heartless and misanthropic course tends to create distaste in others, and thus checks the progress of science.

On Irritation and Insanity, &c.—By F. J. V. Broussais. Translated by Thomas Cooper, M.D.

In the translator's preface to this new and valuable work of Dr. Broussais, he has given a brief and clear abstract of the fundamental doctrines of his author. As these are little known to many, who talk flippantly about Broussais, and his practice, we shall make them the beginning of the present article.

"The Body consists of certain organized parts, as the circulating and respiratory apparatus, the thoracic and abdominal viscera, the muscular apparatus, the secreting and excreting glands, the osseous structure, &c.

"The membranous elements, of which these are composed, are tissues.—They are all of them subservient to the nervous apparatus, of which the Encephalon is the centre of communication.

"The tissues of the animal body, appear to be composed chemically, of fibrine, of gelatin, and of albumen. The muscular parts are chiefly fibrine; the skin, the mucous membrane, &c., are chiefly gelatin; the nervous apparatus is albuminous. The phosphat and carbonat of lime composing the bones, do not seem to have like properties with the other tissues; but these chemical substances in the living body have not been fully examined. All of them, except the bones perhaps, are contractile upon the application of certain substances called *stimuli:* upon this property (of contractility) depends the motion and action of the organized parts.

"Life is the aggregate of those functions which the several organic parts of the body perform, on being stimulated into action, by the natural stimuli of caloric, light, air, atmospheric electricity, and food, in the usual and regular proportions and degree.

"The organic actions excited by these natural stimuli in a healthy body, constitute the normal, regular, healthy functions of the various parts so stimulated into action; the aggregate whereof, is included in the term Life. When the tissues from any cause, are more than usually irritable; or the stimuli applied, are in excess as to proportion, or from their unusual character, the natural stimulation of the tissues and organs, becomes increased or exalted into over-excitement or over-stimulation, technically called *Irritation*. *Stimulation*, therefore, is the term appropriated to what produces regular, usual, normal, healthy action; *Irritation*, to a morbid increase of stimulation; and, in the language of *Rush*, may be termed, morbid action. *Irritation* has various shades and degrees, extending from a very slight excess of stimulation, up to inflammation, and consequent disorganization of the part affected, terminating in suppuration or in gangrene.

"Irritation, producing abnormal, morbid action, may, according to the degree and continuance of the irritation, exist in a tissue or an organ, or a viscus, for a long time: the consequence will be functional derangement, without manifest organic lesion or destruction. After long continuance, this functional derangement may assume the character of habit, or may proceed gradually to sub-inflammation, inflammation, and disorganization.

"Contractility, stimulation, irritation, are not entities distinct from the tissue itself, which is contractile and irritable, or which is stimulated or irritated; they are words without meaning, if the meaning do not strictly include the tissue stimulated or irritated: we know nothing of them, but in connexion with the tissue itself, of which they are properties.

"All the tissues are pervaded, more or less, by nervous fibre.

"The nervous apparatus, consisting of the encephalon and its ramifications, and the spinal cord and its ramifications, may be considered as divided into two great portions—the one serving for voluntary, and the other for instinctive and automatic functions. The encephalic apparatus serves for the first, the spinal cord and its ramifications for the second set of functions.

"Sensation, perception, feeling, consciousness, are words denoting that property or function of the encephalic nervous apparatus by which we have cognizance of objects extraneous to us, and also of the visceral affections and wants within us, transmitted to the encephalic centre by the internal visceral nerves. This property or function of the encephalon is termed *Sensibility*. It connects us with the material world extraneous to our bodies, and with the affections or modifications of our internal organs, destined to instinctive and automatic functions.

"Hence we have two sources of sensation, viz.—one, the impressions made on the nerves of our senses by external objects; and another, the impressions made on our internal, visceral nerves, and thence transmitted to the nervous centre, the encephalon. The nervous apparatus of voluntarity, is stimulated to action by these transmissions of impressions from without, and affections from within us. The influence of the encephalic centre on the nervous system in various parts of the body, is called *Innervation.* The nerves that transmit to the brain information of the internal visceral affections, are not the same as those that transmit from the brain, the resulting voluntary motions.

"All the tissues and organs of the body being instruments of, and subservient to the nervous apparatus of the encephalon, whenever any of these are morbidly irritated, or have suffered lesion, or any other abnormal (morbid) affection, the nerves of the part become irritated, and act sooner or later upon the encephalic, as well as on the neighboring nervous apparatus; the nervous system thus becomes gradually irritated, and assumes abnormal, morbid action, and what is called *disease* ensues.

"Disease is a word only, not an entity or thing. Like other abstractions, it has been personified. But disease is strictly nothing else than the disordered action of some injured or irritated tissue, producing derangement of function; it has no meaning separate from the tissue actually affected: and the cure of disease, is the restoring the regular, healthy, normal action of the part, in lieu of the irregular, abnormal, morbid action, which constitutes disease.*

"Hence, no man is competent to pronounce on disease, who is not well acquainted with the regular, normal, healthy action of the part morbidly affected; so that from the symptoms and indications he can judge of the locality, the kind, and degree of abnormal action. All medicine is, therefore, founded on an accurate knowledge of anatomy and physiology, and on these alone. All else is empirical."

In the second part of the volume, Dr. Broussais applies the physiological doctrine of irritation to the disorder called *Insanity.* This had been long deemed a mental affection, or disorder of the mind. It became his business to show, that insanity was an affection of the encephalon, and of that alone.

The amount of his practical improvements in medicine is, that pathology resolves itself into the knowledge of gastric affections; that the essential fevers of authors, or as others vary the phraseology, by saying fevers of the whole system, are referable to gastro-enteritis, simple or complicated; and that the symptoms which have been assigned to distinguish them, are the constant signs of the inflammation of the internal organs, and that there is no fever independent of such affection.

In the developements of this doctrine he has shewn that the seat of diseases is in general well determined, and the action of morbid causes well appreciated. The treatment accordingly proceeds upon a more sure and precise foundation, and is more rational, more successful. The cases which call for general or local blood-letting, and for revulsions in inflammatory affections, are established also on more secure principles. Those therapeutists, who are deficient in precise knowledge of the affections of the stomach, cannot properly estimate the action of medicine on that organ. The phenomena these produce in the animal economy, must vary with the state of the stomach, and consequently the same medicine, in the hands of an ignorant practitioner, if at one time good, may at another be prejudicial; may cause a slight or violent effect, or prove altogether inefficacious.

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* "The leading principles of physiological therapeutics, are:—

"*Sedatives:* including general, and topical bleeding by leeches and cupping: mucilaginous drinks; cold effusions; gentle laxatives and enemata. The general rule being, to avoid as much as possible, irritating by medicaments an internal surface already in a state of irritation.

"*Revulsives:* as epispastics, sinapisms, and sinapial pediluvia, irritating unguents, cauteries, and issues."

In this, which is somewhat erroneously called the new physiological doctrine of Dr. Broussais, diseases are judged to have determinate locations. The stomach, as the most important organ, spreads its sympathies over all others, and receives their influence from all parts. Consequently, every thing appertaining to the stomach is fundamental; and since, together with the small intestine, it is the chief seat of fevers, its affections form the most important study in pathology. It is, more especially, the essential organ for practitioners, as the action of medicines is universally tried upon the stomach, and through its intervention upon the other organs.

Now, it is impossible to be much versed in medical erudition, without knowing that those principles are not new. We say so, without disparagement to the great merit of Dr. Broussais. We say so, rather to confirm the truth of his doctrine, and to prove, that it has the sanction of time through many of the highest names in medicine. More than a century ago the stomach was allowed to possess an exquisite sensibility. It was recognised to have powerful sympathies, and a leading influence in the production of diseases, and to be principally the seat of fever. Fever itself was admitted to be of an inflammatory nature, and particularly a phlegmasia of the stomach or intestine, or both, requiring the antiphlogistic treatment,—namely, spare diet, emollients, and bleeding. Hence, since fever was then considered as an affection, having a determinate seat, it appears that diseases began to be studied long ago in a physiological manner,—that is, in their true localities, which are the affected organs.

We could quote many passages from the practice of physic of Baglivi, and generally, from his works, to prove his knowledge of the concern of the stomach in fevers,—of these being, in fact, inflammation of this organ and its connexions.

I quote from the Antwerp edition, in 4to., of 1719. In the section, *de febribus malignis et messentericis*, b. 1. He says, *Quæ nobis videntur malignæ, a viscerum plegmone, aut eryssipelatode fiunt, idest a causa evidente et manifesta.*—p. 51.

Ipse enim ut vera fatear, quæ diligenti observatione et matura didici meditatione, a duabus potissimum causis, malignas has

febres pendere observavi inflammatione viscerum, et ab apparutu pravorum, crudorumque humorum in primis viis. vel in massa sanguinis, * * * * * * * *
Sed revera non sunt malignitatis effectus, verum stomachi ab exaltato humore irritati, lacessiti, afflicti, qua cessante irritatione, et stomachi indignatione composita, præfata cessant accidentia.

While representing the dangerous nature of the semi-tertian, he says—

Maxime lethalis est ob ventriculi potissimum nervosæ suæ partis læsiomen.—p. 55.

Again—

Inter malignas ratione vehementissimæ inflammationis ventriculi numeratur lypiria febris, in qua interiora uruntur, exteriora frigent: pendet itaque ab ique sacro, sine erysipelate ventriculi * * * * * *Eadem de causa lingua arida est, et sicca, sitis ingens, pulsus celer est, inæqualis et parvus. Parvus hic pulsus, affecto qualibet de causa ventriculo, semper observatur. Multo magis quando pessima inflammatione, uti est lypiria, afficitur. In doliribus enim, affectionibus inflammatorii partium membranosarum, parvi semper sunt pulsus, jure similitudinis, vasa inter, ventriculum et partes membranosas, nec non jure originis et consensionis.*—p. 56.

With regard to the nature of typhus fever, Baglivi is as much a Brousseian as the Professor of *Val de Grace*.

Typhos febris est ardentis species, quæ totum occupat ventriculum * * * * *At typhos, sive ardens febris ab inflammatione totius ventriculi pendens conjuncta hæc habet accidentia, vomitum, singultum, tensionem, et dolem in tota ventriculi regione, calorem, jactationem,* &c.

If it were our wish to multiply quotations, we might make many more to the same purpose, and equally apposite from Baglivi's two books on the practice of physic. He also anticipated the modern improvers of pathology by autopsical examinations of the parts affected, and comparing the appearances on dissection with the previously observed symptoms. He frequently insists on the sensibility of the stomach, and its influence on the whole animal economy; its sympathies with other parts, and the milder phenomena of its irritation only. He also places in the stomach the seat of contagious and epidemic fevers, and is as strict an observer of the state of the tongue as any Brousseian.

He observed the reciprocity of action between the mucous surface of the stomach and the skin, in small pox and scarlatina. His practice was conformable to these views,—it was antiphlogistic, and quite different from the incendiary treatment, by stimulants, wine, and tonics. Nevertheless, he distinguished diseases into two classes,—one depending on the irritation of the solids; the other, on their relaxation. The former, and a portion of the latter, are the Broussaian diseases of irritation. He considers purgatives, diuretics, and diaphoretics, irritants; baths, emollients, and anodynes, as relaxing. It is evident, then, that this great practitioner had begun to open just views of the nature of gastric complaints, and their treatment, which have, in our own times, been so much farther extended, so as to form now the true basis of pathology and therapeutics.

Rega, a professor of medicine at Louvain, came after Baglivi, and has left a small, but valuable volume, on *Sympathies*, in which he has turned to good account the anatomical labors of Willis and Vieusiens. To them he is indebted for some advantage over his master, in physiology and pathology. Of his seventeen chapters, ten relate to the sympathies of the stomach with other parts; and one in particular, of the origin of fever being seated in the mucous coat of that organ, as most sensible to the action of stimuli. He refers, as evidence of the cause of the fever, to the red, livid, and spacelated spots, observable on dissection.

The treatment of fever, according to Rega, is indicated by the nature of the affection of the stomach, which may sometimes be the effect of an irritation of the first ways, produced by acrid matter; but is more frequently the result of inflammation.

> *Ex quibus omnibus deduci potest, febres malignas ordinarie foveri vitio stomachi scilicet inflammati.*—p. 147.
>
> *Typhos sive febris ardens ab inflammatione ventriculi pendens conjuncta hæc solet habere symptamata.*

Then he enumerates the symptoms—

> *Hinc est, quod inflammatio hæc maxime socia sit pesti, variolis, petechialibus febribus podagræ retropulsæ, febribus ardentibus et inflammatoriis.*
>
> *Satis frequenter in stomacho febribus his extinctorum sunt maculæ plures, jam nigræ, jam rubræ, ventriculus deprehenditur rubicundus lividusque, variis modo rubris modo nigris maculis distinctis, et vasa sanguinea perreptantia capillaria multo sanguine turgida sunt.*—p. 148.

His theory is the same with that of Baglivi; and we see from their writings, that then, as well as in our time, there was an endeavor to designate the place of fever, deemed to be the only affection out of the domain of the organization,—a disease purely vital,—a general affection, without a determinate seat. All other diseases were constantly referred to the organs where they appeared, and considered to belong to a particular location.

Thanks to the luminous impulse given by Morgagni, we are already in possession of more precise ideas concerning the affections of the chest, derived from the labors of Corvisart, Broussais, Laennéc, Bayle, and others; regarding those of the abdomen, from the examinations of Prost, and the important *recherches* of Broussais; and relatively to the sufferings of the head, from the judicious inquiries of Récamier, and his pupils, particularly Lallemand, Andral, Rostan, and others.

The oblivious interval between the period of Baglivi, and the revival and extension of a rational pathology, referring diseases to the diseased organs, has attracted the scrutiny of thinking, well informed physicians, who find a solution of the extraordinary aberration in the seductive example of systematic writers,—some of them persons of great talents and authority; but whose judgment, in this instance, was misled by a false analogy. The classification of botany, by Linnæus, was seen to give facility for its acquisition, and immediately the study of medicine was included in a nomenclature. Species, genera, orders, and classes; and groupes of symptoms, differently combined, according to the fancy of each nosologist, produced a multiplicity of diseases out of a small number of affections. An arbitrary arrangement took place, of what should have been left in the natural order of the organs and their functions. The relation of these to each other was forgotten, and the true direction in the study of medicine for some time lost; but was recovered in France, and is now generally resumed through Europe.

The characters in objects of natural history, are fixed and invariable; but the symptoms of diseases are always changing, according to the age, sex, individual sensibility, momentary disposition of the patient, moral influence, season, climate, and method of cure. Hence, the readiness with which different genera and species were made of the same affection, and how things were classed differently that were in reality the same. The errors of classification were the more perplexing, the more they deviated from the standard of nature, according to which, diseases are to be considered in the organs, which, united together anatomically and physiologically, compose an apparatus, concur in producing the same function, and are consequently joined in the same sufferings, are joined pathologically. It is only by referring the symptoms with discrimination, to the organs from which they derive, that the treatment can be rational. By glancing at the classifications of Sauvages, Linnæus, Vogel, Macbride, Sagar, Cullen, Plouquet, Pinel, and Frank, it will be seen how much they vary in the foundation on which they build, and how much their classes, orders, genera, and species, differ in principles and number. For the genera alone, Sauvages makes three hundred and fifteen; Vogel, five hundred and sixty; Cullen, one hundred and thirty-three, &c.; and Hosack, two hundred and six.

In compiling such works the number is arbitrary, and in studying them now the time would be misspent. The last-named nosology, and the boasted exclusion of the Brousseian doctrines from the chair of practice, will serve to convey an idea of the manner in which the practice of physic was taught in this city during several years.

But Bordeu appeared, and began the salutary reformation, which has since given a new face to the study of medicine. 'He was the grand founder of the doctrine of the organs, which prevails at present. He established the two leading properties of the living fibre,—sensation and motion,—and he gave a just view of the nervous power. These excellent contributions will be found more particularly in his researches on the glands, and on the mucous tissue. They are articles of general anatomy, that have no model. Bordeu was the most useful of the great men of the school of Montpellier, so eminent and distinguished for the genius and learning of its professors.

The school of Paris owes its glory to its adherence to strict induction, its aversion to hypothesis, and the matter-of-fact direction it has given to the medical sciences.

While its rival sacrificed rather too much to metaphysical speculations, the school of Paris has made the greatest progress in anatomy, physiology, and pathology. It early felt the high importance of the examination of subjects, and a true medical philosophy has resulted from this spirit of autopsical inquiry. No loose reasonings, or evasive answers are tolerated there, but clinical observation and pathological anatomy have drawn round the physicians of Paris, professors and practitioners,—the circle of Popilius.

Bichat, the most distinguished pupil of this school, was endowed with a rare activity of mind, a great power of attention, and an excellent judgment. He also dropped upon the propitious time.

Bordeu came first—but Bichat went farther; and what Bordeu did for him, he did for Broussais—his finest work.

It must be admitted, that a great deal of what characterizes the school of Paris belongs to its local advantages. First of all, to its abundance of the materials of anatomical knowledge, the facility of *post mortem* examinations, and of comparing symptoms with appearances. The opportunities are many, and they are never lost. With them it is impossible that physiology and pathology should not improve.

Can they ever flourish, we will ask, where no such advantages are found? And, as the question comes home to our own position, we may inquire what changes are required in the present state of the medical profession to give New York a good school of physic?

[*To be continued.*]

GLEANINGS FROM FOREIGN JOURNALS.

Session of the 7th of February.

Cholera Morbus.

Mons. Arago read a letter from Mons. d'Arbal, of Moscow, to the Academy. This letter contained some interesting matter, relative to the contagiousness, or simply epidemic character, of the cholera morbus.

The author relates many facts, which tend to prove that the disease can neither be imported nor communicated. The following are the most conclusive:

The cholera morbus appeared at Moscow unexpectedly, and the fear of contagion pervaded every mind. They had as yet taken no sanatory precautions, when fifty thousand workmen, in terror, fled the city. Moscow was immediately surrounded with troops, that the disease might be confined to the city. This was useless. How surround a city, which occupies as much ground as Paris? In the mean while, none of these fifty thousand laborers carried with them the disease elsewhere. Some had the germs of the disease, sickened, and died, at the quarentines or hospitals, without communicating the disease to any around them. The number of patients was not greater in the vicinity of the hospitals than elsewhere. Few of those who guarded the sick were its victims. Individuals have slept with those, who were affected with the cholera morbus, without receiving it. The general opinion of the present day, is, that the disease is not contagious; and the people themselves have, from the number of facts which present themselves, arrived at the same conclusion. The contrary was believed, from the accounts from the distant provinces, principally from the report of the Council of Health, in 1824. This piece was written 1400 leagues from the scene of the epidemic, and the facts, which are there narrated, are so disposed, as to favor a belief in the contagious character of the disease. It was generally believed, that the author of that report was an eye-witness of the ravages of the cholera morbus; but he has been at Paris since 1820. Mons. d'Arbal wishes to destroy the error at its source; he has been seconded by experience to that degree, that the government abolished the system of quarantine, although the epidemic existed; (there were twenty fresh cases a day,) and discontinued fumigation, the inutility of which was sufficiently obvious throughout the empire. M. d'Arbal thinks that the facts, which go to establish the contrary opinion, are *related;* time and distance render the verification difficult. According to him, when they investigate the causes of the disease in an individual, contagion never can be assigned, but causes positive and determinate.

At Moscow, the general opinion is, that the cholera morbus is not contagious, but epidemic. The physicians do not absolutely deny its contagiousness; they are content to say, that there is, as in certain fevers, a focus of infection. M. d'Arbal's letter terminates with the following conclusions, which, he says, are the opinions of the majority.

1st. That cholera morbus is only developed under the influence of certain foreign causes—to wit, cold, indigestion, or drunkenness.

2d. That it is not so terrible, as is generally believed; for if the primary symptoms are obviated, the cure is not difficult.

3d. That the only successful remedy is a high degree of warmth; that the others are nearly useless, is proved in twenty hospitals, where they have adopted different modes of treatment, in many cases directly opposite, and the results have been nearly the same.

M. Loder, a distinguished physician and celebrated anatomist, has attempted recently to show, that the disease is primarily nervous, and that its cause is electro-magnetism.

The epidemic is at present stationary, and will probably remain so until spring, when the cholera will pursue its course as in the preceding years. The author adds, that the regularity of its march can be judged; that, if it spreads in western Europe, as unfortunately there is little doubt, it will not appear in France until 1832, M. d'Arbal concludes, by promising to transmit to the Academy some new documents on the disease, and, among others, the memoir of Mr. Loder.

Session of the 14th of February.

M. Arago communicated a letter from M. Humbolt of Berlin, which concludes in the following manner:—

"The Prussian physicians perceiving that the cold has not arrested the progress of the epidemic, are expecting it among us. They say, they have discovered an excellent mode of treatment, which consists in bleeding to syncope, then they have recourse to calomel. The countenance becomes in a short time green and cadaverous; they then administered opium in tincture, and the disease gives way."

M. Moreau de Jonnet replied to the letter of M. d'Arbal, read at the preceding session. He justified himself from some reproaches directed against him, relative to the measures taken to guard against the invasion of the cholera morbus,—measures, which originated in the report, made some years ago, to the Council of Health of Paris, by himself, since which the disease has evinced a new phenomenon, viz., that of not being arrested by cold, as is generally the case in India, which, according to him, depends on different local circumstances.

In India, the houses are very open, [the temperature of the atmosphere, and that of the interior of the mansions, is nearly the same; and the inhabitants are covered with thin dresses, which are not modified in relation to the temperature. In Russia, the number of furs, used in dress, are augmented as the temperature decreases; the apartments are well closed, and heated with large stoves; and in that artificial temperature the Russian is attacked with a disease, which has hitherto existed only in the warm seasons.

Session of the 28th February.

M. Markus, secretary of the Council of Health, explained its organization, and the mode of conducting its investigations. The council is composed of distinguished physicians, from Paris, Edinburgh, Göttengen, Jena, and Berlin. Its investigations consist—

1st. Of a series of post mortem examinations, to each of which a history of the diseased is annexed.

2d. Of an exact analysis of the blood and bile of the sick; also, of the matter ejected by vomiting and stool; of the fluids contained in the cavities of the body; and of the principal alimentary substances.

3d. In a series of cases, described at the bed-side, after the formula of Dr. Haas.

4th. In meteriological observations and researches, respecting the health of domestic animals and vegetables, which are used as food.

5th. In investigation of the mode of propagation, and the degree of contagion of the disease, with regard to the kind of life, habitations, habits, and social relations of the sick. In a word, to omit nothing, which can throw any light on a question, so difficult to answer, as the contagiousness or non-contagiousness of cholera morbus.

The members of the council have attended, during three months, more than eight thousand patients. Very few of the members have treated less than three hundred, and many more than that number. Their observations, and peculiar modes of treatment, assist the other researches, and shall appear in the collection of memoirs which shall be published, and transmitted to the Academy.

M. M. Arago and Cuvier communicated an elaborate memoir, by Dr. Jannechin, a member of the council, who has had special charge of the post mortem examinations of those, who have died of cholera. This author treats of the degree of contagion, its identity with the cholera of the ancients, and commences by giving an account of the precautions taken to prevent it. The disease appeared first at Nychene Novogorod, the vicinity of which to Moscow, and the numerous commercial relations, together with the belief in the contagiousness, mediate and immediate, which nobody then doubted, rendered its importation highly probable. The military governor-general of the province adopted such measures as the circumstances demanded; quarantines were established, which extended to the limits of the government and barriers of Moscow; and none were permitted to enter the city without previous fumigation.

The authorities of the city also adopted all the necessary precautions. In each of the quarters of the city were temporary chiefs, who corresponded directly with the governor-general, who, with chosen aids, attended to the execution of the prescribed measures. Temporary hospitals were established in each quarter, which were confided to an inspecting physician, who had under his orders a number of physicians and pupils of the Imperial Academy of Medicine and the University. Domiciliary assistants were organized in the most prompt manner. The inspecting physicians constituted a temporary council of health, which were in session daily. Housekeepers were ordered to report to the police all cases which resembled cholera, the symptoms of which were published. Equipages, for the transportation of the sick to the various hospitals, were stationed in every quarter. The disease appeared on the 15th of September. A citizen died; the number of its victims augmented rapidly. The maximum diseased in 24 hours was at one time 244; at present they are reduced to about 20. The barriers are open; the inhabitants of the country are permitted to enter and to depart at pleasure, which has increased considerably the number of those most liable to receive the infection.

M. Jannechen justly censures M. Moreau de Jonnés for pronouncing the disease pestilential, thereby alarming greatly the Russian population. In conclusion, he says, the result of my own observations, and that of my professional brethren are—

1st. That the invasion of the cholera at Moscow, and other places in Russia, has been preceded by a general tendency to derangements of the digestive functions, producing vomiting and diarrhea, which continues throughout the disease, and leads to a belief in a peculiar epidemic constitution of the atmosphere.

2d. Another fact has been remarked at Taganroc, viz., that many animals died with symptoms closely resembling cholera; the same has been observed at Moscow, where geese, fowls, turkeys, and crows, were among its victims.

3d. That investigations, made with the greatest minuteness, prove incontestably, that the disease was not imported, but originated spontaneously in Moscow.

4th. A number of physicians, who believed, after reading the report of M. Moreau de Jonnés, in its contagious character, have, from actual observation, been convinced of their error, and the ranks of the contagionists are almost deserted.

5th. The partizans of mediate and immediate contagion are, in our temporary council of medicine, in the proportion of three to twenty-one; they have not been able to bring forward one authenticated fact, to establish their doctrine of immediate contagion. Their conviction is based like that of M. Moreau de Jonnés, on the relations of others, and not on their own observation.

[I believe no disease should be called contagious, except that which may be produced by contact, direct or mediate. A disease, which is acquired by the inhalation of air, radiated by miasmas, or emanations from the bodies of the sick, should, in my opinion, be designated by some other term. I would suggest that of penetration; and the police should adopt different precautions for each.]

6th. Thousands of authenticated facts, collected in hospitals and private practice, prove the nullity of immediate contagion.

7th. It is now known, that if those who perform all the necessary duties in attending the sick do not take the disease, the effects of the patients, those of the dead, merchandise, &c., are absolutely incapable of propagating the cholera morbus; and consequently that which is called mediate contagion, is an illusion. This assertion is based upon innumerable facts.

8th. The absolute isolation of many persons and entire families, have not preserved them.

9th. The dissection of the bodies of those, who have died of cholera, has never caused the disease. This assertion is corroborated by the experience of English and French physicians in India. I have made fifty careful dissections; I and my assistants have been wounded many times in dissecting, and none of us have experienced any inconvenience therefrom. Some physicians have asserted, that handling the corpses has excited convulsion, which I believe to have existed only in their imaginations.

10th. The duration of the epidemic appears to be limited to six weeks or two months, in the same place. Its intensity is in direct ratio to the hygrometric state of the atmosphere; cold and drought diminish its activity.

11th. The epidemic is most active among the lower classes, in moist and low situations. Drunkeness, debauchery, bad food, incontinence, and the indigestion of certain meals incontestably predispose to it.

12th. Certain houses have been in the condition I term a focus of emanation, which I distinguish from focus of infection. The disease attacked a number who inhabited them, until they were purified by the police.

13th. Six persons were taken in preference from those attacked with cholera, to serve in the hospital.

14th. It has occasionally happened that an individual, labouring under this disease, has propagated it throughout his family; and at other times this has not occurred under similar circumstances.

15th. Numerous sanatery cordons and quarantines have not prevented the disease from advancing from the frontiers of Persia to Moscow, Orenburg, Astracan, and Odessa; and, if the Russian government have imposed restrictions for some time, they were in consequence of the opinion advocated by M. Moreau de Jonnés.

16th. The disinfecting chlorides have been of no utility in preventing the developement of the cholera morbus. They have been extensively used in all classes of society,—in the saloons of the opulent, and in the huts of the poor,—and still the disease has manifested itself in an atmosphere of chlorine. I am ignorant, if there be a deficiency of hydrogen in the miasma.

After these observations, I am justified in the following conclusions:—

A. That cholera is not a pestilential disease; neither do I believe that the plague, according to the strict acceptation of the term pestilential; and that the term pestilential, as applied to the cholera, is but a learned mystification.

B. That cholera is neither contagious, mediately or immediately.

C. That there is a germ, a miasm, which emanates from the patient, and exists in the atmosphere surrounding him.

D. That these emanations constitute a focus according to the intensity of the disease. An hospital must be a focus of infection.

E. A peculiar predisposition is absolutely necessary for the cholera to be developed in an individual. This predisposition appears to augment in direct ratio to the violence of the epidemic; but the proportion in which it produces the disease in a population has not been ascertained in Moscow. It is about three per cent.

F. The propagation of contagion observes the laws of epidemics generally.

G. Circumstances lead us to believe that, in indivuals predisposed to pulmonary absorption, it is the way by which it enters the system. There is, then, no contagion in the exact acceptation of the word; but rather a kind of penetration.

H. The miasma appears to have a strong affinity for moisture, diffused in the atmosphere, and to possess the same degree of volatility. The fact is, that these vapors, condensed in wards where there were a great number of patients with cholera, has furnished my friend Hermann and myself with results precisely similar to that which

Moscati obtained at Florence. This observation, together with the hygrometric and barometric changes, may throw some light on the almost inexplicable march of the cholera morbus. This miasm, inherent in the vapors of water, can it not be elevated in the atmosphere, or be precipitated to the earth, or be carried elsewhere by a light current of air, or dispersed entirely by the violence of the winds?

We may, after these observations, be justly permitted to doubt the efficaciousness of quarantines and sanatory cordons, &c.; and that no means will be found to arrest the march of this scourge, which will only terminate its career at the western coast of Europe. M. Moreau de Jonnés gives this, as his opinion, and I coincide with him perfectly.

This frightful probability authorizes us to assert, that the number of victims will be greater out of the Russian empire; for the only really sanatory measures are those of concentrating the disease in hospitals, and of preventing the formation of foci of contagion in particular houses, and in the midst of families,—measures, which are contrary to the manners and institutions of European nations; therefore it will be almost impossible to carry them into effect. It is idle to rely on the assistance of art in this disease; for, when cholera has advanced to a certain degree, it is absolutely incurable. At times I have seen it advance to this stage, but rarely, it is true. The cholera, which has existed twelve hours, may be cured; and then it decreases in proportion to the duration of the disease. It is very necessary for the patient to guard against a relapse; for there is no disease more perfidious.

If the cholera makes its appearance in a capital, containing a million of inhabitants, if but ten sicken the first day, and if it augments in the same ratio, as it did at Moscow, in a short time all the physicians of France will not be sufficient to administer to the sick; for there will be in a few weeks thirty thousand sick in Paris alone. In conclusion, M. Jannechen thinks the cholera of Russia is the same as that of India, and that described by the ancients.

M. Loder, of Moscow, physician to the Emperor, has estimated the number of patients attacked with cholera in that city, since September 16, to have been 8130; the number cured to be 3581; the deaths amounted to 4385; there remains yet sick, 191. The population of Moscow is estimated at 250,000 souls.

These documents are transmitted to a special commission, consisting of M. M. Portal, Dumeril, Dupuytren, Serres, and Majendie. —(*Archives Generales de Medecine.*)

Cancer of the Brain.

M. Rullier presented to the *Académie Royale de Medecine,* on the 22d of last February, a morbid preparation, accompanied with the following details:—

A woman, æt. 40, of a good constitution, eighteen months before her death, was suddenly seized with epileptic convulsions, which were at first violent, and far apart; but soon became more frequent, and less strong. She suffered from violent cephalalgia, which returned periodically. Her sight by degrees failed her, and the other senses underwent singular anomalies; the intellectual faculties also lost their usual character, but more slowly. The patient, although corpulent, became emaciated, and lost her strength. Nevertheless, for six weeks, she appeared to get better, when, during the night, she was suddenly seized with violent epileptic convulsions, which frequently returned, accompanied with loss of intelligence, a sense of suffocation, and terminated fatally. On examination after death, the lateral ventricles of the brain were found to be distended with fluid, which appeared to be the immediate cause of death; the middle lobe of the right hemisphere of the brain had undergone organic degeneration, being changed into a fibrous tissue, white, and so tenacious, that it could be extended, and even twisted, to a very considerable extent, without laceration; the corpus striatum of the same side was softened, and near it there was a cyst, filled with gelatiniform matter of a soft consistence; and the oblique nerves, as far as their commissure, were in a state of atrophy.—(*Idem.*)

Analysis of the Blood.

The Section of Pharmacy some time ago offered a prize for the best essay on the analysis of the blood, in icterus. But one was submitted to the Academy, and on it M. Orfila reported. The author, in the first part, explained the normal composition of the blood; pointed out a new method of separating the coloring matter by the super-acetate of lead; and proved that the composition of the blood varied according to the sex and temperament of the individual. He observed, that the serum was most abundant in women and lymphatic individuals; and that the albumen, fibrine, and globuline, were most deficient in such persons. In the second part, the author entered into an inquiry, whether the blood in icteric persons contained bile, or any of its immediate principles. It appears he has detected the two coloring principles, blue and white, discovered by Chevruel; and also a compound of albumen and soda, more or less soluble in water. Moreover, he states that the blood in this disease contains a smaller quantity of coloring matter—seventy-seven parts in one thousand, instead of one hundred and twenty-eight.—(*Idem.*)

Inflammation of a Hernial Sac, simulating Strangulation.

In April, 1830, a woman, æt. 50, entered the Hotel Dieu, laboring under the symptoms of strangulated hernia. She stated, that she had worn a truss for a number of years, in consequence of a femoral hernia on the right side; that, for some time before her admission she had felt considerable pain in the point to which the part of the instrument had been applied, and that it had increased so, as to compel her to seek admission. On examination, a tumor somewhat larger than a pigeon's egg, was detected in her right groin below the femoral ligument, which was exceedingly hard and painful to the touch. The taxis was repeatedly employed, and the ordinary antiphlogistic treatment carried into effect, without the slightest advantage. Therefore, M. Lunson determined on operation. A section was made over the tumor, and the hernial sac exposed, which was then laid open, and found to contain a large quantity of purulent matter; but neither intestine nor omentum could be detected, and the neck of the sac was so narrow, as scarcely to admit the point of the little finger. After the operation, all the symptoms of strangulation subsided.—(*Idem.*)

Madness.

Dr. Wanner, of Thomery, near Fontainbleau, believes that the cerebral extremities of the vagous and great hypo-glossal nerves are the seat of hydrophobia. This, he conceives, is proved by the painful constriction in the pharyngeal and diaphragmatic regions, difficult deglutition, aphonia, laborious respiration, and abundant salivation. Dr. W. discovers some analogy between this dire malady and destructive intermittents. Therefore, he asks, if the sulphate of quinine, which is so powerful in the latter, may not be useful in the former? —(*Idem.*)

Perforation of the Cæcal Appendix, by Intestinal Calculi.

Claude Bureaux, æt. 19, complained for two months of pain in the right iliac fossa, which, however, did not prevent him following his usual occupations. However, on the 20th May, 1830, he was seized with fever, vomiting, and abdominal pain increased by pressure, (twenty-four leeches to the epigastrium, cataplasms, and emollient injections.) He entered the Hotel Dieu on the 24th, in the following state:—Great agitation, acute cries, griped face, small and hard pulse, white tongue, slightly red on the borders, great thirst, belly exceedingly painful on pressure, particularly in the lower half; abdominal muscles contracted, hot and dry skin, (venesection, thirty leeches to the belly, emollient cataplasms.)

On the following day his sufferings were greatly ameliorated, and he continued to improve until the 27th, when the pain, anxiety, and the other symptoms returned, attended with convulsions and delirium, (thirty leeches, cataplasm to the belly; tepid baths.) At noon the pain abated; but in a short time it was renewed with increased intensity; his pulse became small, feeble, and irregular; his skin cold; delirium set in, and the convulsive motions returned, (anodyne cataplasms.) He died on the morning of the 28th.

Sectio Cadaveris.

Abdomen—Effusion of purulent matter into the perineal cavity. The intestinal convolutions were reddish, and adherent to one another. The cœcal appendix was folded back on the cœcum, to which it adhered. The cœcum was more voluminous than ordinary, covered with false membranes, and presented at its extremity an ulceration, in the centre of which there existed an opening, that permitted the fœcal matter to pass out. Its cavity was filled with stercoraceous calculi, incrusted in the walls, and which were beginning to create ulceration.—(*Idem.*)

Sensibility of the Teeth.

On the 15th of March, M. Duval read a memoir on the sensibility of the teeth, before the Royal Academy. He mentioned, first, the contradictory opinions of anatomists on this subject. One set of them, he said, considered that the harder part of the teeth could triturate the most dense bodies, and support the contact of very cold and likewise of very hot substances,—even of lunar caustic. Moreover, that it could be carved and filed, without the slightest degree of pain. That such persons looked upon it as inert matter, destitute of life, formed couch after couch by an excretion from the pulpy mould; permitting, however, certain impressions to pass through, and arrive at the organized centre. He then proceeded to explain, how the other set of anatomists had, from reflecting on the numerous circumstances under which the teeth become sensible, particularly the phenomena of *l'aguëement*, attributed sensibility to the harder part. After this exposition, he made known the conclusions he had arrived at, which may be summed up as follows:—The harder part of a tooth, is composed of three layers, the most external *émail*, the most internal of an osseous nature *osteodonte*, and the intermediate one of a horny color, *dictiodonte*. The *émail* or enamel is the only one which is inert and insensible; the two other couches being endowed with life and sensibility. These facts, M. Duval has convinced himself of, by touching each of the three couches in a healthy tooth, when they have been exposed either by use, fracture, the file, or cutting instruments. Finally, he asserts, that the phenomena of caries, also, bears out his statement, for in this disease the hard parts become painful.—(*Idem.*)

A new Maunequin.

Dr. Ozenne read a memoir on a new maunequin of his invention, which differs from that commonly used, in having a part representing the uterus fully developed, and endowed with the power of reproducing its contractions, so as to enable the student to learn more correctly by touch, the dilitation of *os tincæ*, the formation of the aqueous pouch; and, in fact, to assist all the phenomena of labor. M. Ozenne has also replaced *la poupée*, for an apparatus, which bears the greatest resemblance to an infant, having hair, fontanelles, eyes, a nose, a moveable inferior jaw, &c.—(*Idem.*)

Session of the 4th December.

Hermaphrodism.

M. Dupuytren entertained the Academy with the cases of two individuals, who possessed those vices of conformation, which have heretofore been improperly termed hermaprodism.

One of them was recorded a girl, in the register of the *Etat Civil*, and reared as such until she arrived at the age of eighteen. After she was fifteen, she had venereal desires, and attempted vainly to have connexion with men. At eighteen, she had a beard, a masculine form, and sought connexion with females, and at twenty, she was recognized as a man, and dressed accordingly.

In this case, the penis presented no appearance of an urethra, the scrotum was divided by the median line, and the urethra opened in the perineum.

The other individual was a child, aged two years and a half, who presented at the bottom of the belly, a red tumor, covered with a mucous membrane, on the surface of which were two orifices, through which the urine constantly dropped, constituting, what has been denominated, an *extrophie* of the bladder.

M. Dupuytren remarked, that both of these malformations, so different in appearance, arose from the same cause, viz., the non-union of the two primitive halves of the organs on the median lines; only in the first case, the unusual division extended from the lower part of the penis to the perineum; while in the second, it extended from the superior part of the penis through the pubis to the lower part of the abdomen.

M. Dupuytren disbelieves in human hermaphrodites, and thinks that those individuals, who have been supposed such, are males or females, whose sexual organs present some malformation.

M. Rochoux thinks the assertion of M. D. too positive. *He* does not himself believe that individuals have existed, who could at will perform the functions of either sex; but he does believe, that there have been cases in which some of the organs of either sex have existed. In proof of which, he alludes to a model, in wax, which is deposited in the Museum of the Faculty of Medicine at Paris, and the case of a bull, observed by M. Rekem of Florence.

M. Dupuytren doubted the fidelity of the model in the Museum of the Faculty.

M. Thellaye, Conservator of the Cabinets of the Faculty, assured the Academy, that the model is correct, and that it shows some of the organs of both sexes.

Stammering.

M. Itard, in the name of a commission, made a report on the mode of treatment, which M. Colombat has proposed for the cure of stammering. He states, that, until within a few years, physicians have paid but little attention to this infirmity. In 1817, he published in the *Journal Universal des Sciences Medecales*, a memoir, in which he established—

1st. That the functions of the voice and speech are, more than other muscular actions, susceptible of being influenced by the emotions of the mind.

2d. That stammering is a disease analogous to *tremor*, and, like it, is intermittent, variable, and under the immediate influence of moral causes.

3d. That the different kinds of stammering, noticed by authors, are but different degrees of the same disease.

4th. That, to regulate the motions of the tongue, we must, as Demosthenes did, adopt mechanical means. M. Itard's consists in a metallic fish, with two branches placed in the mouth of the stammerer, in such a manner, as to press the tongue backwards. He also compelled the stammerer to speak a strange language.

M. Itard mentioned a memoir, by M. Voisin, who considered stammering as one of the neuroses, in which opinion M. Itard concurs. Also, another memoir, by M. Serres, a physician of Alais, who has advised a method of curing stammering, which has often been successful. This method consists, if the stammering is slight, in pronouncing with strength and vivacity all the syllables, and in prolonging, as much as is possible, those movements necessary for the emission and articulation of sounds; and when the stammering is considerable, to associate with the motions of the tongue, lips, larynx, &c., those of the arms, which should be extended vigorously before each emission of sound.

3d. Another mode of treatment has been proposed by an English author, M. Arnott, in his *Elements of Natural Philosophy*, which consists in making stammerers pronounce a number of sentences, without any pause between the words and phrases.

4th. The method of Madame Leight, of America, who has cured more than one hundred and fifty stammerers, and which has been equally successful in England, Belgium, and France, in the hands of M. Mallbouche, and which consists only in making the patient raise the point of the tongue, while speaking, and to keep it constantly applied to the roof of the mouth.

5th. Finally, the method of M. Mallbouche, who admits ten or eleven kinds of stammering, according to as many defective positions of the tongue, and opposed to each of them is the correct position which cures that species of stammering which depends on the malposition.

M. Itard states, that M. Colombat looks upon stammering as an affection purely nervous, and in this respect differs from M. Hervey de Chegoin, who attributes this infirmity to a mal-formation of the tongue.

M. Columbat distinguishes stammering into *labio chorèique*, and in *gutturo tètanique*, according to its dependance on convulsive movement of the lips and tongue, or a tetanic stiffness of the muscles of the larynx and pharynx. Finally, he offers the curative method of M. Colombat, which consists of the three following means: to place the point of the tongue below and behind the roof of the mouth; to make a strong inspiration at the beginning of a sentence, or at a word difficult to pronounce. Finally, to keep time, while speaking, with the thumb and finger.

These three means are used simultaneously or separately. M. Columbat uses also certain gymnastic movements, to assist the sounds, which M. Itard believes are of little utility, and attributes the success to the other means, which, he says, do but moderate the embarrassed and tumultuous movements of the organs of speech.

These means alone have nought to distinguish them from other modes of curing stammering; but M. Columbat has the merit of employing them together, which accounts for his greater success. M. Itard closes, by reporting the cases of five stammerers, who were presented to the Academy, by M. Columbat, before he began his teatment. Four are cured; in the fifth the cure has been incomplete, in consequence of inapplication on the part of the patient.

The cure has been accomplished in three months, and has every appearance of being permanent; their pronunciation is rapid and precise. To conclude, the Academy awards its approbation to the method of M. Colombat.

Some members spoke on the subject in question. M. Duval alluded to the "planchette," * which Pare recommended to stammerers. He said, that instinct taught the benefits to be derived from simply holding the finger in the mouth, when attempting to speak. These facts corroborate the theory advanced by M. Itard.

M. Castel remarked, that 'there were more male stammerers than female. He did not pretend to know the cause. It is asserted, that stammering was connected with general or local debility, the proof of which is, that the infantile stammerer is cured spontaneously at puberty, by the sudden strength which is at that time developed in the constitution. What M. Itard terms moderators, he considers assistants. When a drunken man stammers, it is caused by the same debility, which prevents him from walking. If the stammerer does not stammer, when he sings, it is because singing requires less exertion than speaking.

M. M. Itard and Villermé combatted this idea of M. Castel. When the stammerer, said the former, is cured in a quarter of an hour, has he ceased to be weak in so short a time? There are, said the other, many stammerers, who possess great strength, and if by some known cause they become debilitated in the same ratio, their infirmity declines.

On the use of Secole Cornatum, in Parturition.—By M. Hervey de Chegoin.

A woman, æt. 24 years, was brought to bed with her second child. The labor commenced on Friday, and she was not delivered until the Monday following. The pains were weak, and at long intervals. To excite them, twelve grs. of ergot, mingled in a spoonfull of tepid water were administered. At the expiration of half an hour, twelve more were administered, and in a quarter of an hour the expulsive efforts of the uterus were excited so considerably, that the labor terminated in an hour and a half; the secundines were expelled six minutes after. Thus the accouchement terminated without any accident, and the child was very well.

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* Literally plank: I presume, a small piece of wood.

M. Hervey de Chegoin avers, that the vivacity of the pains, which he terms artificial, at first alarmed him. He concludes, that they were excited by the ergot, and were not injurious either to the mother or child."

A discussion followed this observation. M. Moreau contended, that the pains excited by the ergot were not normal, but morbid, and asks what would be the consequence of pains so excited in a female with the first child. He thought it probable that the child would perish from the excessive and prolonged pressure to which it would be subjected. He did not deny, that ergot was useful in women of lax pulse, who had already borne children; but he thought it should not be prescribed in women in labor with the first child.

M. Emery, on the contrary, said, that he had employed it successfully in six cases, of which three were with the first child. He considered the prescription of M. Moreau as too absolute, and adduced the authority of an accoucheur of Angers, who had related a great number of cases of its successful exhibition. This medicine hastens the contraction of the uterus after parturition, and consequently it prevents consecutive hemorhages. Once he employed it with this view, and successfully.

M. Moreau said, he did not wish to condemn it *in toto*, but to judge by his practice, and that of his father-in-law, which was very extensive, cases in which it is necessary are rarely observed. He thinks the forceps preferable.

M. Villeneuve thinks with M. Moreau, that it should not be employed in women with the first child; but he admits the necessity of it in other cases. M. Moreau, when the pains are feeble, administers stimulants; accoucheurs, who prescribe ergot, have this advantage over him,—that, in lieu of stimulating the womb indirectly, they excite it directly.

M. Evrat concurs with M. Moreau.

Dr. Ferguson, on Auscultation in Pregnancy.

The *bruit placentaire* and the pulsations of the fœtal heart, are the tokens of pregnancy, and are not generally detected until the fifth month. Dr. F. believes, that the *bruit placentaire* is merely the *bruit de sufflet*, proceeding from the arteries connecting the placenta and uterus. It is most distinct in the iliac regions; but may be heard in many cases all over the abdomen. For the most part, the *bruit placentaire*, and the contractions and dilitations of the fœtal heart, are heard on different sides; but in some cases both are observable in the same place. The *bruit placentaire* always occupies the same place, while the action of the fœtal heart may at different periods be cognizable in different situations. The pulsations of the mother's heart are generally much more slow than those of the fœtus. However, this is not always the case; for, in one instance, the fœtal pulse was only twenty-eight, at a time when the mother's was one hundred.—(*Dublin Med. Trans.*)

Dr. Thompson, on the Styptic of Ruspini.

Dr. Thompson says, that this empyrical agent is composed principally of gallic acid and alcohol, with a small portion of sulphate of zinc, opium, and rose water. The three last ingredients are useless. Alcohol, he says, dissolves one-fourth of its weight of gallic acid, and the solution forms a powerful styptic. He is also of opinion, that the acid is carried in an undecomposed state through the circulation, until it arrives at the bleeding vessels.—(*Med. & Phys. Journal.*)

Dr. Prichard, on Hemiphlegia.

When antiphlogistics, local depletion, and a cautious use of mercury, have failed in affording relief, Dr. Prichard recommends an incision to be made in the course of the sagittal suture, and filled with peas, so as to keep up a profuse purulent discharge.—(*Medical Gazette.*)

Mr. Bennett, Assistant Surgeon of the hospital ship Grampus, on Diffused Aneurism.

"John Morgan, æt. 32, seaman, was admitted on board this hospital, on the 28th September, 1830. His appearance emaciated and exsanguine; his countenance sallow and anxious. He complained of pain in the situation of a tumor, about fourteen inches in circumference, occupying the lower third and inner side of the *right* thigh, presenting its greatest bulk in that situation, and gradually decreasing forwards to the ham and outer side of the thigh. The circumference of the tumor had a defined, hardened margin; the summit was tense, elastic, and gave to the touch an evident sense of fluctuation; the integuments retained their natural color; the leg was somewhat œdematous, and remained flexed, without the power of extension. The patient denied that any morbid appearance, or uneasiness, had existed in the part previous to seven weeks since, when, without assignable cause, the whole leg and foot became swelled and tense, and ultimately 'settled' into the present tumor. Upon the most careful examination no pulsation could be detected in the enlarged surface, except to a slight degree in that position which lay immediately over the seat of the popliteal artery.. Pressure obstructing the passage of the blood through the femoral artery produced no diminution in the bulk of the tumor, nor could any sound be detected upon application of the stethoscope. The patient had no recollection of any pulsating tumor having ever appeared in the ham. He had had some severe rigors, and evidently suffered much constitutionally. Under these doubtful circumstances the limb was placed on a pillow, resting on its outer side, and the evaporating lotion applied. On the 29th, the tumor being in no way diminished, but rather more tense, the necessity became more apparent of settling the question whether the tumor was occasioned by a collection of matter, or by disease of a more serious character. Preparations were, therefore, made to secure the femoral artery, should the tumor prove aneurismal upon introducing a lancet into its substance. This was done to the depth of an inch in a valvular direction, but with no other result than the escape of a few drops of dark blood. This attempt to ascertain the true nature of the disease having failed, adhesive plaster was placed over the puncture, and the limb restored to a state of rest, without any appearance of a disposition to hæmorrhage.

"On the 30th, at noon, the patient having moved the limb roughly, and placed it over the side of his bed, about an ounce of fluid blood, unattended by arterial jet, passed from the aperture made in the tumor the day previous, and was easily checked by placing the limb in a quiet position, and by slight pressure with lint. The two following days were passed without any change in the appearance of the tumor, with the exception of a slight apparent extension towards the upper part of the thigh. A probe introduced into the lancet-orifice in the tumor, passed its entire length in every direction without resistance and without hæmorrhage.

"On the 3d October, the swelling had extended considerably up the thigh, occupying its lower half, was much more tense at its original seat, and gave a more evident sense of fluctuation immediately above the patella. Under these circumstances, Dr. Dobson, principal surgeon to Greenwich Hospital, who attended in consultation on the case, declared his opinion, that, taking into consideration the enfeebled powers of the patient, and the mass of disease in which the parts were evidently involved, the removal of the limb gave the only chance of recovery to the patient; and he having given his consent, amputation was performed on the same day, by Mr. Bennett, assistant surgeon to the hospital, in the presence of Dr. Dobson and Mr. Gilchrist. The limb was removed at the upper third of the thigh by the circular incision; about eight or ten ounces of blood were lost during the operation; ligatures were placed on the femoral, profunda, and three minor arteries.

“After some vicissitudes of rallying and exhaustion, he sunk the next day (4th) at eleven o'clock at night.

“ *Dissection.*

“Upon examination of the removed limb, between two and three pints of dark blood, partly coagulated and partly fluid, were found occupying the lower half of the thigh, nearly insulating the lower third of the shaft of the femur, which to the extent of four inches was denuded of periosteum, and presented a honeycomb appearance. The chief volume of effused blood occupied the situation of the muscles (which were nearly absorbed), and in many parts was in contact with the integuments, chiefly so immediately above the patella. Upon pursuing the examination, a fine aneurismal sac, about the size of a pullet's egg, evidently formed by a dilatation of the three structures of the artery, was found on the anterior surface of the popliteal artery; the sac, at its upper third and anterior surface, was rent to the extent of two inches in a transverse direction. Immediately above the torn sac, and externally, appearing to form a portion of it, was a second dilatation of the artery, forming a sac, the size of a small walnut, lined with a thick layer of coagulum, and communicating with the larger and torn sac by an opening in size not exceeding a third of the natural calibre of the femoral artery. The cellular tissue of the leg and foot was loaded with serum.

“The heart appears to have been in a state of passive dilatation; and the '*right* kidney was placed immediately over the common iliac vessels of the same side.' ”—(*Lancet.*)

“*Case of Spontaneous Evolution.*

“ *To the Editor of the Lancet.*

“Sir,—Having just had an opportunity, I am desirous of adding another case of 'spontaneous evolution of the fœtus in utero' to those already recorded in your Journal. I was sent for last week by a medical man in this neighborhood, to a case of arm-presentation, occurring to a healthy young woman with her third child. The membranes had ruptured that morning at 11, A.M., and the right arm was instantly propelled through the os externum. I arrived in two hours afterwards, and found the woman laboring under strong pains with the arm protruding considerably below the elbow, and of a dark-purple color; I endeavored to push back the arm and shoulder, but without effect, on which I introduced my hand in the short intervals of pain along the abdomen of the fœtus, which faced the pubes of the mother (the head being turned back upon the left shoulder and chest), and got my fingers as far as the groin, but on every attempt to lay hold of the thigh, violent spasmodic action of the uterus came on, which compelled me to desist: I continued my exertions nearly half an hour, when I withdrew my hand and introduced the left one, with its back along the course of the sacrum, in the hope of finding a foot tilted over on that side; but it proved clearly that the feet were both high up in, and apparently grasped by, the fundus of the uterus; I then ceased my exertions, had the patient bled to eighteen ounces, and directly gave her a drachm of laudanum, and left her with the intention of returning when the organ should have become relaxed; I had not, however, left more than half an hour, when I received a message to say the woman was delivered.

"On seeing the gentleman in attendance, I learned that a strong pain had come on soon after my leaving the house, and on his making examination, found the arm had receded, another pain quickly followed, and the nates presented, on which the labor was speedily concluded. "I remain, Sir, your obedient servant,

"William Moss.

"*Eton, April 5th.*"

"*Removal of a tumor fifty-six pounds in weight, extending from beneath the umbilicus to the anterior border of the anus.*

"Hoo Loo, a Chinese laborer, was admitted into Luke's ward, Guy's Hospital, in the third week of March last, with an extraordinary tumor depending from the lower part of the abdomen, and of a nature and extent hitherto unseen in this country. He had been brought to England from Canton, by his own desire, in an East Indiaman, for the purpose of having this tumor removed at one of the London hospitals, the native surgeons declining to make the attempt, a general disinclination to the performance of serious operations prevailing in the East, where both the climate and the law offer important objections to surgical proceedings which may lead to the loss of human life. The case excited considerable interest, both in and out of the profession, from the first moment of his arrival, and he was visited in the hospital by a great number of persons of all ranks.

"We have heard that on his voyage here the change of air had such an effect on his constitution, as to occasion a material increase in the tumor. Since his arrival, his appetite, health, and spirits, were extremely good. While in the hospital, there appeared nothing to induce the surgeon to order him any medicine. His diet consisted principally of boiled rice, and no restraint was placed on his appetite, which was very great. He was generally considered to have improved in health while in the hospital, though it was difficult to form a decided estimate on this point. He all along contemplated the operation with satisfaction.

"It was generally understood that the operation would be performed on Tuesday last, but so great a crowd of spectators was apprehended, that Saturday, which is a *dies non* in the hospital, was fixed on instead. Notwithstanding this precaution, however, an assemblage, unprecedented in numbers on such an occasion, presented themselves for admission at the operating theatre, which was instantly filled in every part, although none but pupils, and of those only such as could at the moment present their 'hospital tickets,' were admitted. Hundreds of gentlemen were consequently excluded, and it became obvious to the officers of the hospital, that some other room must be selected. Accordingly Sir Astley Cooper entered, and, addressing the pupils, said; that in consequence of the crowd, the patient being in a state which would admit of the removal, the operation would take place in the great anatomical theatre. A tremendous rush to that theatre accordingly took place, where accommodation was afforded to six hundred and eighty persons, and where preparations were immediately made for the patient. In about a quarter of an hour, Hoo Loo entered, accompanied by two nurses and a *posse comitatus*, consisting of various functionaries of the hospital, and in the course of a few minutes he was secured on the operating table. A short consultation now took place between Sir Astley Cooper, Mr. Key, and Mr. Callaway, during which it was finally agreed, that if it were found possible, the genital organs should be preserved. The face of the patient was then covered, and Mr. Key, taking his station in front of the tumor, commenced the operation. His object, apparently, was to make three flaps, of such a form and extent, as would cover the penis and the testes when they should be relieved from the tumor. The first flap was made on the anterior part of the tumor; the others on either side. The former of these would have covered the penis, and the two others (which were made semilunar in figure with the convexities looking outwards) would have accomplished the purpose, when united, of enveloping the testes, and at the same time of forming the integument of the perineum. The first incision was commenced on the right side, just under the abdominal ring, and being carried obliquely inwards for about an inch, was continued so as to form the semilunar cut, from the lowermost point of which, the knife was again carried inwards, in order, apparently, to leave such a small projection of integument as, with a corresponding piece on the opposite side, might serve to go round the root of the penis. This portion having been reserved, the incision was continued onwards for about four inches in a straight line, and was then turned at a right angle, parallel with the operator, forming a line of about two and a half inches in length. A similar cut was then made on the left side, and connected with that on the right by the parallel or transverse cut. The flap thus formed was now dissected from the tumor and laid back upon the abdomen. The operator then proceeded to lay bare the two cords and the penis, a step in the operation which was performed with very great neatness. Sufficient time had now elapsed for the depressing effects of the operation to exhibit themselves, while the penis and testicles had yet to be dissected out. The determination to attempt this arose from its having been ascertained that the sexual inclinations of the man were unimpaired, seminal emissions being occasionally experienced. The delay, however, which so intricate a portion of the operation would have occasioned, now induced Sir Astley Cooper to propose that the genital organs should be sacrificed, and the suggestion was promptly acceded to. A temporary ligature was accordingly passed round each of the cords and the penis, and these being divided, the remainder of the operation was pursued solely with a view to the removal of the whole mass. But a period of time elapsed before the conclusion of the operation which must have far exceeded the anticipations even of the most fearful, and by the time the tumor was entirely separated and the exposed parts were closed over, an hour and forty-four minutes had passed. This tremendous protraction was chiefly occasioned by the intervals which were from time to time allowed the patient for recovery from the fits of exhaustion which supervened. Complete syncope occurred twice, and during the whole of the latter steps of the operation he was in a state of fainting. The quantity of blood lost was variously estimated by those who assisted, and though certainly not large, it was the operator's own impression that the hæmorrhage was the immediate cause of death. It would probably be correct to state the loss at twenty-five ounces, although as few as fourteen, and as many as thirty were named. Of this quantity not more, we should think, than a single ounce was arterial; all the ligatures were quickly applied, and with great dexterity. The number of large veins divided was immense, but only three small arteries, besides the two spermatic, were taken up. Immediately after the removal of the tumor, another fit of syncope—if syncope could be said to be at all incomplete for the last half hour—came on, from which the poor fellow did not for a moment rally. No remedies that were directed to overcome this state of collapse had the slightest effect; warmth and friction of the extremities, warmth to the scrobiculis cordis, the injection of brandy and water into the stomach, and, ultimately, from the suspicion, that the loss of blood had been too great, transfusion to the amount of six ounces, taken from the arm of a student—one amongst several who offered to afford blood—were amongst the means resorted to. The heart's action gradually and perceptibly sunk. The patient did breathe after the operation, but that is as much as can be said. Artificial respiration was subsequently, but vainly attempted.

"The fortitude with which this great operation was approached, and throughout undergone, by Hoo Loo, was, if not unexampled, at all events never exceeded in the annals of surgery. A groan now and then escaped him, and now and then a slight exclamation, and we thought we could trace in his tones a plaintive acknowledgment of the hopelessness of his case. Expressions of regret, too, that he had not rather borne with his affliction than suffered the operation, seemed softly but rapidly to vibrate from his lips as he closed his eyes, firmly set his teeth, and resignedly strung every nerve in obedience to the determination with which he had first submitted to the knife.

"His character was naturally exceedingly amiable. When occupied in thought, his features assumed an appearance of slight melancholy, but at other times a very cheerful and good-tempered expression of countenance prevailed. The appearance of the features after death was very characteristic of this. Whenever an exhibition of the tumor was desired, he was displeased and somewhat reluctant, seeming to imply by his language, that it was of 'no use' to show it. With the nurses he had become a great favorite, and his death elicited the utmost commiseration, perhaps a few tears, in the ward which he inhabited.

"Hoo Loo was thirty-two years of age, and the tumor had been ten years arriving at its present growth. Its effect upon his frame, and the muscles of the abdomen was not particularly oppressive. It of course occasioned a very great strain upon the fore-part of the body, and to preserve his balance he was compelled to throw the shoulders backward, and assumed the gait of an alderman whose belly preponderates and displaces his centre of gravity. The weight of the tumor was conjectured to be about seventy pounds, but when placed in the scales after its removal it weighed but fifty-six. His strength was not affected by it. He could take a stout lad in his arms and toss him with ease.

"The tumor commenced in the prepuce; the cause of it is involved in obscurity; nothing could be gathered from the patient to lead to the supposition that it was the effect of a blow, or to justify its being ascribed to any one particular exciting cause. Its form inclined to that of a flattened spheroid. When removed, and resting either upon its upper surfaces or its base, it sunk and spread until its mean depth was about six inches. The neck or peduncle by which it was attached was of a triangular form; the upper and anterior side of the neck was parallel with the os pubis, extending on each side of the external abdominal ring about two inches and a half, its other sides occupying the lateral boundaries of the perineum, and meeting in an acute angle immediately before the anus. Although the disease commenced in the prepuce, that portion of the tumor, or an elongation of it, was preserved in an isolated state from the rest of the growth, although of course totally disfigured, and presenting far greater appearance of disease than other parts of the integument. It now hung at the lowermost portion of the tumor, forming a second tumor, presenting an orifice for the discharge of the urine, varying in its transverse diameters from one to three inches. The passage to the urethra was, as far as the finger could reach, smooth and hardened; externally it was a mass of tubercles, which spread on each side over the surrounding portion of the tumor, presenting for a considerable distance a hard and thickened cutis, studded with elevations. The sides and posterior part of the body of the tumor, as well as the whole of the peduncle, were of a perfectly healthy and natural appearance. The circumference of the mass was four feet, that of the neck two feet, each side of the neck, which was about equilateral, measuring eight inches. When the patient stood upright, the lower part of the tumor reached considerably below the knees.

"It may be mentioned, that the urine also found a vent externally by an opening situated on the surface of the tumor immediately at the base of the preputial tumor, which latter, as it had a strong tendency to overlap on the side of the opening, hid the false passage, if it may be so called, from sight.

"*Post-mortem Examination.*

"The examination of the body took place on Thursday morning. From the tumor itself a certain quantity of fluid (not large) escaped during the operation; the solid mass weighed fifty-six pounds, as we have already mentioned. It was decidedly steatomatous; but the examination has not yet been completed. About an inch of the penis was laid bare by the dissection.

"There were no appearances which arrested the attention on the examination of the body. The *stomach* and other viscera were perfectly healthy. The cremaster muscles were both much increased, apparently from an enlargement of the fibres, and not from any multiplication of them. The state of the wound was not at all unnatural; but some of the veins which came from the tumor were as large as the little finger. The arteries of the chord were not larger than usual."

"*On the origin and treatment of Sporadic Cholera.*

"*To the Editor of the Lancet.*

"Sir,—Communication of medical evidence being the chief end of your admirable journal, whose superior capacity for every purpose of science is sufficiently attested by its immense circulation both in Europe and Asia, I am led, by the passion of research, common to my brethren in this country, to lay before your readers a few observations relative to sporadic cholera, the phenomena of which have outstripped the long-spun wisdom of the medical boards of either Presidency, and have tempted, among a host of authors, the fertile mind of Annesley, to contribute one of the most stupendous works that ever resulted from cerebral pregnancy.

"Cholera, whether sporadic or epidemic, notwithstanding all that has been written on the subject, is still in its stage of pupillarity; the most contradictory accounts are given of its origin and nature, enveloped, as both unfortunately are, in equal obscurity. Dr. Cullen placed this disease among those which especially and primarily affect the nervous system. Another able nosologist, Dr. Good, introduced this disease among those which peculiarly affect the digestive functions; while many distinguished practitioners hold that it begins in the vascular system. If the student appeal to the members of the medical boards in India for information, as men of vast experience, and possessed of abundant resources, he will find their labors miserably unproductive. The disputed question, whether the nervous or sanguineous functions are primarily disordered, is still an enigma to these individuals.

"In effect, we find the members of the boards of physic in their public statements, evince a profound degree of knowledge, and a most felicitous way of meeting the question at issue. 'With respect,' say they, 'to the functions in the first instance affected with this dreadful scourge, we are of opinion that the disease in some cases seizes the nervous, and in others the sanguineous functions.' On groping further into authentic records, we perceive the peculiar features of this malady but little elucidated. There are some respectable authors who consider the immediate seat of morbid action to be on the skin; others, equally entitled to attention, will maintain the stomach to be the identical spot. The eminent Dr. Good and his disciples are powerful advocates for diseased bilious secretion; and this secretion is held to be always yellow, and in excess, by the followers of Cullen. And what says the great *official* authority, Dr. Annesley? 'A singular and sudden change of the circulating fluid is the proximate cause of cholera.' The latest theory, and which can boast of a patron in the best practitioner in Calcutta, is that of a morbid secretion from the intestinal canal.

"With such a diversity of opinions on the nature of a disease at once so important from its frequency, its severity, and its fatality, I was induced to watch narrowly the signs which ushered in the more painful and dangerous deviations from health which sooner or later ensued. The facts, derived from much patient observation, are now presented to the profession on the fullest conviction of their accuracy, and with some expectation that they may ultimately tend to amalgamate the various dogmas into one sound and obvious basis. In the month of November last, it fell to my duty to see fifteen Europeans, who had at different periods been seized with spasmodic cholera. The particulars of each case would occupy too much space in your journal, neither is it requisite that they should undergo separate detail. In all of them the essential features had perfect similarity, and in every instance the premonitory disturbance consisted of *excessive pain confined to one spot, immediately beneath the edge of the last true rib at the right hypochondrium.* The case which I select is that of a lady, whom I never left from the period of seeing her to the restoration of health.

"A. B., æt. 20, complained on the evening of the 1st of November, of severe spasm, which she described as deep-seated, affecting one spot immediately under the last rib of the right side. To obtain relief, she had extended the muscles of the abdomen, and applied some stimulating liniment; but the spasm continued unabated in violence for twelve hours. At this period, the pain advanced to the abdominal muscles and lower extremities, accompanied with violent vomiting and purging, and a scalding sensation about the epigastrium. The countenance now became pale and anxious, the pulse sixty and soft, the tongue of a slaty color, and the skin clammy. The matter thrown up from the stomach and *duodenum*, was in large quantities, in the first instance of the consistence of jelly, and of a light muddy color, and afterwards watery, and having a whitish appearance. The matter dejected was, from the first, pale, watery, and presenting a peculiar odor. The constant retching and vomiting were followed by great thirst, and a burning sensation over the region of the stomach. The capillaries of the conjunctiva contained no red blood. The vital functions now became more and more depressed, but the mental functions were not in any way affected. Hitherto there had been no appearance of any bilious secretion. I saw the patient an hour and a half after the vomiting, purging, and general spasms had commenced. I immediately applied ten cupping-glasses to the right hypochondrium, and over the incisions a large hot bread poultice, and, to my delight, and the patient's relief, the severe vomiting ceased. The usual stimulating liniments and friction were at the same time applied to the extremities. The purging continued, but with this remarkable difference, that instead of the matter being pale and watery, it assumed the appearance of ink. The frequent introduction of emollient enemas eased the patient's sufferings at stool, and allayed the irritation of the intestinal canal. No urgent symptom now remained. In consequence of the patient being greatly exhausted, I ordered a solution of sherry and water to be given every quarter of an hour. The temperature of the body gradually, but very slowly, returned. A slight relapse of bilious purging occurring on the night of the 2d, I gave calomel grains ten, opium grains two, when no other bad symptoms appeared, and the patient began to recover rapidly.

"*Remarks.*

"Such then, briefly, was the progress of this case of spasmodic cholera. In one other instance the same remedies were employed, and with similar success. The remaining cases were seen in a later stage of the disease, and not till calomel and opium had been administered. I, therefore, did not take any active part in the treatment, particularly as the care of these individuals was entrusted to a very able gentleman in conjunction with myself. But the history of the disease, gathered from each of the persons afflicted, concurred in this particular:—a sense of cramp being first experienced at the edge of the lowest true rib, and apparently deep seated.

"After a most attentive survey of the numerous works which have of late years been published to elucidate the phenomena of cholera (excepting Mr. Annesley's great book on epidemic cholera, which is somewhat too bulky for a tropical reader), I can subscribe to no doctrine, however great may be the merits of the author, which has hitherto been inculcated. The proximate cause, in my opinion, is constriction of the ductus communis choledochus, occurring when the natural organs, particularly the liver, are loaded with blood.

"There can be no doubt in the reality of the difference between Dr. James Johnson's theory, and that which is now for the first time brought before the notice of the profession. According to Johnson, the capillaries of the hepatic system are in a state of constriction. That this is unfounded in fact, is sufficiently evident from the circumstance, that when the constriction is removed the flow of bile is *rapid and in large quantities.* The truth is, that not the capillaries, but the ductus choledochus is affected with violent spasm. Two forces are acting against each other; the one, and most powerful, is the impervious tube, the other the bilious secretion, which latter, resisted in its proper course by the former, is driven back into the liver. If the secretion of an organ so important in its functions as the liver is known to be, is suddenly obstructed in its course at a period when it can least of all bear with the change, then it appears clear enough that the symptoms which follow are not altogether inexplicable. In short, the seat of the earliest spasm—the paleness of the matter dejected in the first instance, and its bilious nature when the spasms subside,—the vomiting and difficult respiration from the approximation of the stomach and diaphragm,—the dark condition of the blood, and general spasms (to say nothing of *post mortem* appearances),—may, one and all, be fairly accounted for in the manner I have already described,—constriction of the ductus communis choledochus during a congestive state of the natural organs.

"It had often been asked to what the remote causes of cholera could be imputed. I enter into the views of those who consider the most frequent exciting cause to consist in vicissitudes of atmosphere; and that whatever tends to debilitate the general system of the frame, predisposes to this disease. Let it not be forgotten that the atmosphere between the tropics is in a state of far less density than elsewhere, in all seasons; and that the sudden changes of weather which occur, operate most powerfully on the functions of respiration, circulation, and digestion. What particular connexion can be ascribed between these changes and the phenomena attendant on cholera, I do not pretend to know. Let my brethren in the west put the same question to themselves in reference to typhus fever. It is well known that the several ingredients of the air do change their form and combine with other bodies, and doubtless such changes have an injurious influence on the human frame when in a state of debility,—affecting in one individual the arterial system and causing fever, affecting the nervous system in another individual, and producing cholera.

"In deeming it a duty to bring certain facts and opinions founded on facts before the notice of your professional readers, they are respectfully but confidently submitted to unprejudiced judgment.—What I contend for is shortly this; that the qualities of cholera are diffusive spasms, but that the *essence* of the disease consists of spasm of the ductus communis choledochus. It is this latter circumstance which explains the reason why the human frame alone is subject to this disease, quadrupeds having no gall-bladder, and no ductus communis choledochus. If spasm affecting the vital functions, or the animal functions, or the natural functions, in all climates produce the most alarming diseases incident to man, surely it is not remarkable that spasm of the duct from an organ so important to health, and in India so sensitive to disease, as the liver, should produce the phenomena of cholera.

"In reference to the treatment of this disease in general, I have little to add. In cases of severe purging it is advisable to give, in the first place, a full dose of calomel and opium, and, when this is administered, let no time be lost in applying cupping-glasses, and after these a large poultice; but where the purging is not very violent the first indication is to remove the stricture, and allow the accumulated bile to pass into the intestine. And here I will point out two great errors in Dr. James Johnson's paper on cholera. He says that the capillaries of the hepatic system are constricted, and no bile can be secreted. This is not the fact; the secretion is superabundant, and obstructed in its current. Again, he speaks of the vomiting which is so distressing, as an effort of nature to determine to the surface, and thereby effect a cure. An ordinary fit of vomiting, as a general rule, has this advantage; but the spastic state of the stomach, diaphragm, and abdominal muscles, is so severe in this disease, that when it continues beyond a certain period the bodily powers are first impaired, and finally cease to act. To bring about an interval of rest has always been the first indication, except with Dr. Johnson, and he must pardon me for telling him that violent peristaltic motion of the duodenum is alone sufficient to obstruct the current of bile.

* * * * * * * * * * * *

"I am, Sir,

"Your obedient servant,

"BENDYSHE.

"*Calcutta, Dec.* 1, 1830."

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On the Abuse of Purgative Medicines in Fevers; by Robert W. Wells, M. D. Acting Surgeon, U. States' Army, Fort Wood, Louisiana, 1831.

It may appear a bold assertion, but I believe it to be a true one, that the celebrated work of Hamilton, commonly called the "*Inestimable Work on Purgatives*," has entailed more evils upon mankind than any other medical publication which has issued from the press. In every page may be found an apology for the employment of what has truly been denominated a most incendiary method of practice, in almost every disease to which mankind is subjected; and what is more to be lamented, it is an authority admitted by every one to be of the very highest order. The indiscriminate employment of purgative medicines, as they are at the present time used by the great mass of American and British physicians, is the most egregious system of empiricism that has ever been imposed upon the civilized world. When compared with this, every other species of quackery sinks into utter insignificance. But it is not the present generation alone that are doomed to be the victims of this sweeping mode of practice. Almost every writer and teacher of the present day, on both sides of the Atlantic, appear infected with the purging mania, and the various classes of medical students annually let loose upon the world, following implicitly the dictates of their masters, commence their career with an equally unsparing hand; and, until calomel, jalap, and gamboge be exhausted, there is little hope for ourselves and our posterity. They too will be purged out of the world as their fathers have been before them, and will inherit the gastro-enteritis of the present day in its fullest perfection.

Can it be considered astonishing, that the mucous coat of the stomach and intestines should so universally be found in fever patients, after death, in a state of inflammation, when we reflect that they have, in all probability, been under the influence of powerful cathartics during the entire period of their disease? What mucous membrane, be it ever so sound, can withstand the violent remedial measures employed in the treatment of all fevers? It is now well understood, that this membrane is in a state of irritation in the early stage of every essential fever. Mr. Southwood Smith, in his valuable treatise on fever, has pretty satisfactorily established this fact, and when it results fatally, this membrane is generally found in a state of inflammation and disorganization. What, then, must be the effect of such powerful drugs as calomel, senna, jalap, &c. which are so universally employed in its treatment? There are some, I am aware, who contend that irritation is not an unit—who assert that there are various species of it, and that irritating medicines may in some cases be beneficial, by changing the nature of the existing irritation into one of a salutary description. This, however, is mere hypothesis, upon which no rational system of practice can be founded. We are entirely ignorant of the essential nature of irritation;—is it not therefore absurd, to endeavor to establish the existence of various kinds of it, when we are so completely in the dark as to its own nature? A peculiar action of the nerves of the affected part, constitutes irritation; but this explains nothing, and is the sum of our knowledge respecting it. It is possible irritation may vary according to the tissues in which it is found to exist; but if it does differ, our ignorance of the nature of the affection is such, that we are unable to ascertain the fact. We have no right to imagine the existence of more than one species of it in the same tissue, for we know of but one. It is true, this may vary in intensity, and will consequently be followed by various effects; but this affords no proof that its essential matter is not the same. Irritation of the mucous coat of the intestine, will in one degree of intensity produce, a common diarrhœa, and in another, a well marked dysentery; and it will be contended, no doubt, that these diseases are essentially distinct—that they are the products of different causes, and that the irritations existing in the membranes in the two diseases, are by no means identical. But how frequently do we see a diarrhœa glide into a dysentery, or a dysentery into a diarrhœa? thus proving conclusively, that the irritation in each is one and the same, and differing in intensity alone. If, then, this division of irritation in the same tissue be unfounded,—if we have no evidence that it differs in anything but in its degrees of intensity,—if the doctrine of the substitution of one species for another, rests upon no solid foundation, upon what principle is the present indiscriminate practice of administering cathartic medicines in irritations and inflammations of the mucous coat of the intestinal canal, to be defended? I contend there is no principle in the science of medicine which will justify us in irritating an irritated membrane, or in adding to the inflammation of an inflamed one. Partial irritation, inflammation, and ulceration upon the external surface, or the lining membrane of the fauces, nares, or urethra, may be treated advantageously with irritating applications, upon principles by no means interfering with my positions.

In the early stage of fever, the mucous coat of the stomach and intestines is in a state of more or less irritation. Now when this membrane is found inflamed and ulcerated in a fever subject, who has been treated in the ordinary manner, is it the disease or the remedy which has produced the catastrophe? It is admitted that the early employment of mild purgatives, and if these be not sufficient, of the more active sort, for the purpose of freeing the canal from its fœcal contents, will prove advantageous. In consequence of the febrile irritation, the natural fœces may become irritating, and it will no doubt be of service to get clear of them; and a gentle stimulus of the liver, by a moderate quantity of calomel, may prove beneficial; but I deny that the daily employment of active purgatives, often repeated, can be defended upon any rational principle. What but the abuse of these remedies, is the reason we hear so much about debility and prostration of strength in the latter stages of all fevers, calling for the constant employment of the most powerful stimuli? Does not every one know, that the effects of an active diarrhœa for forty-eight hours are prostration and debility to a very great extent? What then must be the condition of that patient attacked at the same time by two powerful enemies, viz. the disease and the remedy; and is it to be wondered at if he sink in the encounter? The employment of active purgative medicines in the treatment of fevers, is productive of two effects; to prevent or obviate which should be the entire object of the physician, and if he can prevent them, nothing more is required of him. The effects I allude to are inflammation and debility; with the exception of that form of fever where its force seems concentrated upon the brain, I can conceive no reason whatever for the continued employment of active purgatives, and even in this form, after the reduction of the action of the heart and arteries, I entertain strong doubts of their utility. It is now well ascertained, that the quantity of blood in the cavity of the cranium, remains under all circumstances the same, if we except the formation of tumors in it; and the doctrines of "the flow of blood to the brain," and of "the brain being deluged with blood," are proofs of nothing but total ignorance in the writers of the nature of the cerebral circulation. What good effects, then, are to be expected from the employment of purgatives after the reduction of the pulse by the lancet and by other means? It may be said, they act as powerful revulsives; but would it not be safer and more judicious to employ external revulsive measures, and preserve the strength of the patient already greatly exhausted? It would prove but poor satisfaction to cure our patients of their diseases and kill them by our remedies. In cases of fever with thoracic or abdominal affection, after the canal has been evacuated of its contents, purgatives, so far from producing any good effects, prove highly prejudicial, especially in the latter description. It is generally conceded, that little if any benefit is to be expected from them in thoracic affections not the consequence of fever. Many contend that they are prejudicial in all primary thoracic diseases. Why purgatives should be nugatory or injurious in these affections, and beneficial in fever with thoracic disorder, we are not informed. In fever, where the principal force is directed to, and and concentrated upon the stomach and intestinal canal, their employment, for the reasons before given in treating of dysentery, is highly injurious.

It cannot, I think, be questioned, that the debility attendant upon the latter stages of fever, is as much if not more to be attributed to the remedial means employed than to the disease itself. If by way of experiment, an individual in the enjoyment of perfect health, be subjected to the same treatment as a fever patient, what will be his condition at the expiration of seven or nine days? In the first place, let a powerful emetic of ipecacuanha and antimony be administered, and then let him be well *physiced* with calomel and salts, or calomel and jalap, or with another favorite prescription, senna and salts; let him be denied all solid nourishment, and deluged with lemonade, toast-water, and the like, and let him be bled perhaps to the amount of two pounds;—what will be his condition at the end of this period? The answer is obvious. Now, if to all this be added the debility which is the necessary consequence of long-continued febrile irritation, is it at all to be wondered at, that the patient sinks into a state of prostration, to extricate him from which requires all our skill.

If it prove necessary in the course of the fever to evacuate the intestinal canal, mild and unirritating injections are infinitely to be prefered to cathartic medicines of the mildest kind. During the progress of fever, the lining membrane of the canal becomes in the highest degree irritable, and the most unirritating laxatives become drastic purgatives. I have seen the Ol. Ricini in the quantity of a single drachm, and the very smallest portions of rhubarb and magnesia, which in a state of health would produce no sensible effect, cause hypercatharsis in the latter stage of yellow fever. The same thing takes place in all fevers; what then must be the effect of an active cathartic administered in this condition of the canal to a person already exhausted by disease? Must it not increase this exhaustion, and add to the irritation of a tissue already irritated and tending rapidly to inflammation? We hear a great deal about the vitiated, irritating, foul, and morbid secretions that accumulate in the canal, in the progress of fevers. What ought to be the consequences of such a state of things? What are the effects of irritating matter of any description in the intestines in a state of health? Are they not diarrhœa and increased peristaltic motion till the offending matter is expelled? Now as it is admitted that the mucous membrane exists in a state of preternatural irritability and sensibility in fevers, will not these foul irritating contents effect their own expulsion without the assistance of purgatives? An occasional enema is, as a general rule, all that is required. By their use the desired effect of evacuating the large intestines is obtained without adding to the existing irritation, or farther reducing the strength of the patient, towards the preservation of which every effort should be directed.

Although the irritability of the intestine in the early stage of fever may not be such as to preclude entirely the employment of purgatives, yet after the canal is once evacuated, it is difficult to conceive what farther advantage is to be derived from their exhibition. If the object be to lower the action of the heart and arteries, cannot this be obtained by blood-letting? Will it not be more advantagaous to deplete at once with the lancet, than to irritate with purgatives the immense extent of surface of the intestinal canal, the sensibility and irritability of which are already in the highest degree exalted, and by which the febrile symptoms are in a great measure maintained? In all diseases when the mucous membrane of the canal is in a state of integrity, purgatives may be employed with advantage, or at least without injury, if used moderately and discreetly; hence, in inflammations of the brain and its membranes, they prove unquestionably beneficial both as revulsives and gradients, and the same may be said of other inflammations when the canal is in a sound state. Every advantage which it is asserted purgatives produce, can be obtained by other means—reduction of vascular excitement by blood-letting, and the evacuation of the canal by injections.

It is by no means my intention in this paper to deny the importance and utility of purgatives, judiciously administered in the treatment of fevers; it is the indiscriminate application and unsparing manner of their administration, under every conceivable state of the system, that is to be condemned. The objections are to the manner of employing them, such as we find recommended in the various works on the practice of medicine. It is against such doctrines, promulgated by men who stand at the very head of their profession, in works which are in the hands of every practitioner, and serve as text books to the numerous classes of students in this country, that it becomes the duty of every man under the conviction of their fatal tendency, to enter his strongest protest. The day is not far distant when we shall cease to be enslaved by a name either in the old or new world; when medical works without number, which at the present time, it is considered treason to controvert, will be consigned to irretrievable oblivion. That day will be hailed by the philanthropist as the happiest of his existence.

OPHTHALMIC REPORT.

[Continued from p. 175.]

On the Treatment of Iritis.

We find one set of ophthalmologists deprecating the use of mercury in iritis, and advocating local and general blood-letting, purgatives, nauseating doses of tart. ant., and low diet; no matter whether the affection be rheumatic, podagric, mercurial, pure idiopathic, or traumatic. On the other hand, we see a no less respectable assemblage of names, advocating the mercurial plan, without depletion, as the most effectual. How shall we reconcile such diversity of opinion? How mistrust the judgment of such men as Staff Surgeons Thomson and Melin? Still we cannot avoid it; for if we admit the one, we necessarily condemn the other.

I must confess, that when I succeeded Mr. Melin in charge of the Ophthalmic Hospital, I felt embarrassed how I should proceed with the treatment of iritis; but on mature reflection, I thought that not only as a matter of courtesy, but duty, I was bound first to test the opinion of my very able predecessor, who maintained that mercury was sufficient of itself in curable iritis. The first cases which I treated in this way, after I succeeded him in charge of the hospital, got well without other treatment than the exhibition of mercury and the application of belladonna; but the following case then came under my observation, and served to shake the confidence my previous success had given me in the mercurial plan, without other treatment.

Private William Price, of the 14th foot, a robust young man, in the latter end of the summer of 1826, was a patient of mine in the Surgical Division of Fort Pitt Hospital, on account of a papular eruption, which succeeded to negative ulcers on the penis. On the 22d October, he was admitted into the Ophthalmic Hospital, with turgescence and thickening of the iris, and irregular contraction or puckering of the pupil of the left eye, some globules of lymph being effused on its margin. He did not suffer much from intolerence of light, but he had, particularly towards morning, lancinating pains in the globe and corresponding temple. The extract of belladonna was applied to the brow, and he was put under the influence of mercury. On the 25th, his mouth became affected; then, the inflammation and effusion ceased; but between the dates above specified, so much lymph was effused, as to produce a false cataract with universal synechia posterior. I was about to discharge him from Hospital on the 24th November, when he suddenly became attacked with a similar affection of the other eye. I bled him from the temporal artery ad deliquium, applied the belladonna, and exhibited full doses of calomel and opium. On the 26th, his mouth became affected, and the symptoms gradually subsided; the effused lymph being rapidly absorbed. He continued weak after these attacks, and on the 23d December he was seized with a fresh attack of iritis of the right eye. The belladonna was applied and mercury exhibited until the 28th, when his mouth became sore; but before this event took place, so much lymph was extravisated, as to place this eye in the same condition as the left.

In this case, we have seen that from the three attacks of iritic inflammation, which the patient labored under, he only recovered from that, for which arteriotomy was performed. I could cite seven other cases, in which deformities similar to those already mentioned, resulted from acute iritis treated with mercury and belladonna, but without blood-letting. Therefore, I would recommend it as an axiom, that general blood-letting should be performed in all forms of acute iritis, when the patient can bear it, as not only possessing the power of suspending the inflammation, and thereby preventing the effusion of lymph until the mercury has had time to impregnate the system; but as being also beneficial in rendering the constitution more susceptible of the mineral. I could relate many cases in affirmation of this position, but I shall content myself with one,

Private Wm. Ellis, 39th Reg't. æt. 23, admitted March 5th, 1827, with vascularity and muddiness of the right iris, irregularity, though not contraction of the pupil, a zone of vessels on the sclerotica, and œdema of the upper line, with slight pain, but without intolerance of light. He attributed his disease to cold on night guard.

Vs. ad ℥ xxxvj.
℞ Submuriatis Hydrargyri, gr. v.
Pulv. Opii. gr. ss. 3tia, qq. hora.

6th. Stationary.

Pergat.

7th. Mouth sore; inflammation much diminished.

10th. Discharged to barracks.

Sergt. Charles Stewart, æt. 24, 1st Foot, admitted December 18th 1827, laboring under slight turgescence and tortuosity of the conjunctival vessels of the right eye, with a deep red zone of direct trunks, concentrating near the corneal border. The iris was darker than natural, very vascular, and thickened. The pupil was contracted, the aqueous humor was muddy; his vision was very indistinct, and he complained of pain in the temple and brow, great intolerance of light, tepid lachrymation, and some fever. Six weeks before his admission, he was discharged from the South Hospital, where he had been treated for veneral ulcers. On examinaton, I found that his skin was thickly covered with a papular eruption, and on inquiry, he informed me that his ocular disease had existed for ten days.

I took thirty ounces of blood from his temporal artery, applied the belladonna, and exhibited large doses of calomel and opium.

On the 28th, his mouth got sore, and his recovery was perfect and rapid.

I have treated two venereal and three idiopathic cases according to the antiphlogistic plan, without mercury; but I regret to say, that two of my patients, (one of whom had the venereal disease,) lost their vision; one (the other venereal subject) got well with adhesion of the lower segment of the iris to the capsule of the lens, partial opacity of the latter membrane, and necessarily, imperfect vision; while the remaining two recovered but slowly, and labored for a considerable length of time under weakness of vision, relaxation of the vessels of the globe, more or less intolerance of light, and abundant lachrymation upon the slightest attempt to examine small objects.

It not unfrequently happens that iritis assumes a subacute character; then bleeding is unnecessary, as the mercury affects the system sufficiently soon to prevent the effusion of lymph; and even though lymph be effused when we first see the patient, the event of itself, does not demand blood-letting; for such an operation can no more promote its absorption than its further deposition. I have seen four cases of this kind; one I treated by local and general blood-letting, purgatives, tart. ant., vesicatories, and low diet—but he lost his eye. The other three recovered under the use of mercury. I shall cite one case to this end.

Capt. J. 40th Regt. æt. 33, had suffered much from primary and secondary symptoms; while in Portugal in December last, was affected with venereal ophthalmia of his right eye, which yielded to mercury. On the 24th September, he called on me on account of a return of the disease. The conjunctiva was relaxed, a zone of vessels were situated at a small distance from the corneal border; the iris was dull and vascular, the pupil contracted, and a pustule had formed on the anterior surface of the outer part of the iris. He had no pain during the day, but much at night, the eye felt rather cold, as also the tears which were increased in quantity, and the admission of light was very severe. I examined his throat and skin most carefully; but could not discover the slightest disease, and it was more than nine months since he had any cutaneous affection. He stated that this affection of his eye had existed for more than two months, but was not sufficiently severe to induce him to submit to treatment.

The extract of belladonna was applied to his brow, and large doses of calomel and opium were given until he became salivated. His recovery was rapid and perfect.

Frequently after acute iritis has been subdued by proper treatment, a vascular zone still continues on the sclerotica, and the conjunctival vessels are enlarged. This is not at all indicative of a continuance of the morbid process; it is merely the consequence of laxity of the vessels, produced by inflammation, still unable to act upon the propelled blood. Stimulants, when applied in such cases, scarcely ever fail to reproduce iritic inflammation. On the other hand, vesicatories to the nape of the neck generally produce the desired effect.

EDITOR.

[*To be continued.*]

A new method of performing the operation for Phymosis.

The most common manner of performing the operation for Phymosis, consists in making a longitudinal section of the prepuce with a sharp pointed bistoury, armed with a small ball of wax,* nothing can be more simple than this operation, and as far as a curative means may be desirable, it is effectual; nevertheless, I conceive there are two serious objections to it,—first, the deformity, and secondly, the inconvenience arising from the pendulous and useless prepuce, which, by the section, having lost the support of the glans, falls beneath it, and resembles the bifid deformity of the extremity of the verge with which infants are sometimes ushered into the world, and like it, never fails to produce more or less difficulty in exercising the proper functions of this organ. Some British and French surgeons, aware of the consequences now specified, as arising from the longitudinal section of the prepuce, have deviated from the ordinary *modus operandi.* The former are in the habit of performing circumcision, and the latter of excising triangular portions of the lateral flaps, resulting from the longitudinal section. Of these, I consider circumcision to be the better operation; for by it, all inconvenience and deformity is removed,—objects which are never completely effected by the removal of the lateral flaps, without the incisions, are carried so far down as to meet behind the frœnum; then, this operation resembles circumcision, but it loses some of its advantages, for the parts are not cut so regularly, and are shorter above than below; the operation is more protracted, and the extent of cutting, from the first section, and the obliquity of the others, is nearly twice as great as in circumcision. Though I am disposed to admit the superiority of circumcision; still I am far from believing that it is incapable of improvement, for it has always appeared to me, as one of the most incomplete of the minor operations of surgery. The necessity for operation being admitted, the operator seems to have one grand object in view, viz: to cut the mucous membrane as short as the skin, and to effect this, he draws it forcibly down, and fixes it so between the handles of a dressing forceps or some other such instrument, before he makes the section. This being effected, the glans is exposed, and a circular wound of considerable extent results from the retraction of the skin. The ordinary dressings are applied, and in no long time the wound heals, leaving the glands exposed.

It appears to me, that no part of the human body is useless; for it would be unwise to look on any of the Creator's works in this way. It is certain that persons live very comfortably without the tonsils uvula or prepuce; so may a man be happy enough with one leg; but there is very little doubt, that he would be more happy with two, and it will always be found that in proportion as parts are necessary to minister unto our wants, so will their loss be felt. On questioning those who had lost the tonsils, uvula, prepuce &c., after they had attained the period of adolescence, they have universally informed me, that though contented with their present state, they nevertheless felt some deviation from their wonted condition, which they would as soon, were it possible, was reinstated.

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* The lateral sections have justly fallen into disuse.

Considerations of this kind, have led me, when the operation for phymosis became necessary, to remove less of the prepuce than surgeons are in the habit of doing. In this operation as well as in all others, I guide my knife by what I conceive to be correct pathological views; these with respect to Phymosis are, that the stricture is always at the extremity of the mucous membrane, which, no matter whether the disease be congenital or otherwise, is in a state of hypertrophy, and that the integuments consequently became elongated, and from irritation and position, lose their contractility of tissue. Connecting these facts with the desirable object of retaining, as far as possible, the sensibility of the glands, by leaving it the natural envelope, I have, during the last five years, performed the following operation twenty-seven times with success.

The patient being placed in the erect position, the cutaneous portion of the prepuce is to be drawn forwards, by the fore-finger and thumb of the left hand, while, by a single stroke of a curved bistoury, held in the right, the superabundant fore-skin is removed, together with a line of the mucous membrane. The integuments will now retract, and leave the mucous membrane enveloping the glans; for all the strictured portion has not been removed. The operator then makes three sections of the mucous membrane; one on the dorsal aspect, and one on either side, carrying these different incisions in the direction of the *corona glandis*, as far as may be found necessary for the eversion of the mucous membrane.* The mucous membrane, thus everted, should then be retained in contact with the cut and retracting integuments, by a few points of suture; thus both are kept in contact, and no raw surface is exposed, save in the site of the vertical sections. A wet fold of linen is then to be placed on the penis; union by the first intention, soon takes place; the mucous membrane becomes quickly settled in its new position; and, on the third or fourth day, according to circumstances, the sutures may be removed. The wound commonly heals in a very short period; the hypertrophied condition of the mucous membrane rapidly subsides during the suppuration and granulation of the triangular spaces, resulting from the vertical sections above specified, and the everted portion of the mucous membrane assumes a cutaneous character. Finally, the folded mucous membrane, together with the skin, which should never be cut very short, forms a good defence against the loss of sensibility in the glans.

EDITOR.

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* In some cases, where the stricture is confined to a small extent of the mucous membrane, the sections required are small; but it not unfrequently happens, that the hypertrophy extends much higher up; then, the vertical sections must be more extensive. I have operated on several cases where it was necessary to carry the incisions to the posterior part of the *corona glandis*.

Sanguineous Abcess of the Foot.

Anne Jordan, æt. 15, in the latter end of May, 1827, consulted me in consequence of a disease of her right foot, which she stated was of two years' standing, and for which she could assign no cause. On examination, a flat tumor seemed to occupy the outer and superior part of the dorsum of the right foot. Two fistulous openings existed at the internal and inferior part of the tumor, which led upwards and outwards to diseased bone. She informed me that one of the openings alluded to, was produced by the rupture of the then most prominent part of the tumor, from which nothing but blood was discharged; and that the other opening originated in the same way, and was attended with the same circumstances. Finally, that after a short time, the sanguineous discharge ceased, and was succeeded by a thin purulent secretion, with which small spiculæ of bone were occasionally cast off. The tumor, at the period of my examination, was soft, attended with a sense of fluctuation; the integuments were of a dark color, and marked with tortuous veins. I punctured the mass, and to my surprise nothing but blood was discharged; by the probe I also discovered that the os cuboides, external cuniform, and the third metatarsal bone, were carious. For some succeeding days, blood was discharged, partly clotted and partly fluid; then the discharge assumed more of a purulent character; but the blood still continued, in greater or less quantity, until the 10th, of June, when with the assistance of Staff Surgeons F. Clarke, Quinsey, and Dawn, I performed the following operation:

An incision commencing below the external malleolus, aud corresponding to the inferior edge of the os calcis, was carried horizontally forwards for an inch, by which the anterior extremity of this bone was gained; then, it was prolonged obliquely, across the arch of the tarsus, to within a quarter of an inch of the outer border of the second metatarsal bone, by the edge of which it was carried forwards between the second and third toes; then, through the sole of the foot, in an oblique direction, to the point where the division of the integuments on the tarsal arch commenced. The integuments on the dorsom of the foot were now elevated, until the articulations between the cuboides and os calcis, and the external cuniform bone and astragalus were exposed. This being effected, a flap was raised from the plantar aspect, then, the ligaments connecting the above articulations, were divided, and the parts included by the sections removed. Two arteries poured out blood freely, aud were secured by torsion. The edges of the wound were then brought into contact, and light dressings applied. Union by the first intention took place in all parts of the wound, save at the angle between the astragalus and second metatarsal bone, where it granulated from the bottom. In three weeks the healing was completed, and soon afterwards the girl followed her usual occupation, her lameness being scarcely perceptible.

The bones above mentioned were in an advanced state of caries, they were soft, vascular and irregularly hollowed out, and from them three small bony fragments lay detached. The carious bones were surmounted in the circumference of the disease, by irregular bony spiculæ that seemed to project from the periosteum, which was thick, dense, and vascular. The superincumbent soft parts were matted together, ulcerated, and perforated by fistulæ.

This case is similar to that which occurred in the tibia, of a boy thirteen years of age, who was admitted into Hospital on the 26th of August 1794, under the care of Pelletta. Here are his words:

"*Mollis erat quidem, sed latius in interiorem cruris partem extensus, qui sine mora apertus plurimum meri sanguinis tum fluidi, tum concreti dedit; sinceri puris nunquam dedit; sed vel saniosi quidpiam vel sanguinei inter deligandum excernebat, cui ulceris color respondebat vel cinereus, vel fuscus. Tandem os nudum se ostendit, idque multis locis asperum. Præterea caro mucida, lardo affinis ex inæquali superficie increscens febrim, et, quoties deligabatur, dolorem haud modicum excitaverat. Qua propter ne homunculus macie conficeretur, ex medio femore crus ei sinistrum amputatum est.*

"*Adiposa exsecti cruris membrana multam lympham continebat. Musculi sani, præterquam circa ulcus, ubi in fungosam carnem abierant. Hujusmodi caro ex tota tibiæ anteriori superficie pullulabat, eique hinc inde bracteæ quædam osseæ inæquales, tenuesque inhærebant, ab errante veluti osseo succo depositæ. Tibia ad epiphysin superiorem confracta, ubi frustum penitus mobile a diaphysi secesserat. Os purgatum cum diligentius inspiceretur necroseos notas exhibuit, nam cortex exterior ob asperitates et succi ossei inæqualem concretionem regeneratus fuisse apparebat, dum interior extinctus in bracteam satis longam, mobilem conformatus a priori cortice includebatur.*"—(Exercitationes Pathologicæ, Par. 1, p. 209.)

Cerebral Malformations.

Case 1st.—On the 14th July, 1831, Doct. J. Wright of this city, was so kind as to invite me to examine a female infant, born on the morning of the 12th, who, he informed me, had a most unusual form of cephalic configuration. We found the child small and impoverished, the cranium appeared perfectly solid, not more than one third its natural size, and a tumor of the color and dimensions of a fowl's liver, to which Doct. Wright aptly likened it, projected from the inferior part of the forehead, immediately above the root of the nose, and nearly overlaping the eyes. It was soft to the touch, devoid of pulsation, and excoriated in a few points, which were covered with adhesive matter. When we elevated it from the eyes, they appeared perfect, and the irides obeyed the stimulus of light. This unfortunate object cried and moaned when irritated on any part of its body—took the breast, and in other respects, did not differ from ordinary children. No material change took place until the morning of the 17th, when she was seized with, and died in a convulsion. At one o'clock, P. M. in the presence of Doctor's Wright, Nelson, and J. Sweeny, I examined the deceased.

Sectio Cadaveris.

The bones of the head were small, perfectly ossified, and united to each other by a line of cartilage. There were no fontanels. There was no falx. The brain was about one-third the ordinary size; it was not divided into hemispheres, and its convolutions were few and shallow; its posterior third was broken down and filled with blood, and all the figured parts before the tubercula quadrigemina above, and the crura below, were wanting. The first pair of nerves were deficient. The second pair were traceable to the superior tubercula quadrigemina. The remainder of the nerves, with the cerebellum, medulla oblongata and tentorium cerebelli, were in their normal state.

The fungus which overlapped the eyes, extended backwards through an opening that admitted the point of the finger, resulting from a deficiency of the nasal bones, and the inferior and internal angles of both halves of the frontal bone, and terminated at the anterior part of the brain. The right anterior part of this tumor was of the consistence of cheese, and somewhat granular, the interspaces being filled with a bloody fluid. The granules were of a deep brown, interspersed with numerous red points. The left side of this morbid mass, was much more pultaceous, and of a darker hue. Its neck, if we may so call that portion, which traversed the cranium, was the most soft, resembling coagulated blood, was invested closely by the pia mater, and where it came in contact with the brain, the latter organ was to a certain extent, in a state of ramollissement.

The cranial foramen was rounded off, and closely lined by the dura mater, which terminated by incorporating itself with the skin. The crista galli did not exist, and there were no foramina in the superior plate of the ethmoid bone.

Case 2d.—A few days since, Dr. McClay was so obliging as to allow me to examine the head of an infant, who had come into the world with but one eye, above which was a tegumentory body, exactly like the prepuce. It was without a nose. The Doctor informed me that this monster lived for half an hour, and was seen to roll the eye.

Examination.

Head of ordinary size. When the dura mater was punctured, four ounces of straw-colored fluid were discharged. There was no falx; the brain was not more than one-fourth its ordinary size, and was without anterior lobes, though the internal carotids were of the natural size. It was indented on each side, the fossæ being occupied by projections of the dura mater. The tentorium was deficient. Two gray and irregularly oblong bodies represented the hemispheres of the cerebellum—the pons was small, and all the figured parts, before and above it, were absent. Finally, the first four pair of nerves did not exist.

The eye was in the inferior and central part of the forehead, and was of the natural size—the cornea was divided into two equal halves, by a transverse albuginous band, and the retina was wanting. There were two lachrymal glands, one on either side. The orbicularis and recti muscles were fully developed, but the obliqui did not exist. The comissures of the tarsi were directed upwards and downwards. The membrana nictati was placed at the inferior comissure. There were neither puncta lachrymalia, nasal sac, nor duct. The only nerves that entered the orbit, were, a branch from the fifth of either side, and the sixth pair. Each branch of the fifth divided as it entered the orbit. The superior branch resulting from this division, again divided into two branches, one of which went to the forehead, and the other to the corresponding lachrymal gland. The inferior branch, also divided into two portions, of which the superior of the left side supplied the superior rectus, and the inferior of the right side, the inferior rectus muscle, while the inferior portion of the left, and superior of the right side divided into a lash of minute twigs which perforated the sclerotica, and represented the long ciliary nerves. The sixth pair supplied the lateral recti muscles.

The tegumentory promontory was about half an inch in length, hollowed for two-thirds of its extent, and apparently lined by a secreting membrane. The ethmoid, nasal, spongy, and nail-like bones were deficient, and the orbit was formed by the superior maxillary and frontal bones.—EDITOR.

Phlebectasis.[*]

The disease termed *varix* by the older authors, has been more properly designated *phlebectasis*, by Alibert, Breschet, and Briquet.

Early in my professional career, I turned my attention to this subject, because I found that the preceptors I had heard, and the writers I had consulted, on this disease, were only wading in the depths of uncertainty; establishing hypothesis for theory; assuming for facts what never existed; and passing, without comment, those things whose reality was undeniable, and whose attainment was accessible, as if they were ignorant of their intrinsic merit, or felt more disposed to quote ancient authority, at the expense of real knowledge, and preferred a method of palliation, founded on supposition, to one of cure, based on sound physiological facts, and established by reason.

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[*] φλεψ, *vena, and* ιχτασις, *dilitatio.*

In the year 1826, I submitted some of my researches on this disease to the *Army Medical Board of London;* but as then, they were not as ample and satisfactory as I could wish, I postponed their publication. At the present time, I am vain enough to believe, that these objections do not exist, and therefore have determined to submit the fruits of my investigation to the profession.

Predisposition to Phlebectasis.

Under this head, I shall first give an analysis of fifty cases, of five years' standing, observed by me in succession, and then of one hundred and eighty-seven; being the number I have either treated or examined, since I entered upon the investigation. The first analysis is intended to show in a positive, and the latter in a negative, manner, the strong disposition which exists to the developement of phlebectasis.

First Analysis.

1. Twenty-eight stated, that some of their near relatives had, or did labor, under the same disease.
2. In forty-five, the disease commenced in the superficial veins of the legs.
3. In thirty-three, the saphena vein of one leg was first affected.
4. In twenty-two, the vein of the left leg was first affected.
5. In eighteen, in which the disease commenced in one leg, those of the other were similarly affected.
6. In five, the disease commenced in the veins of both legs simultaneously.
7. In thirty-seven, in which the veins of one or both legs were affected, the hemorrhoidal were diseased.
8. In nine, the hemorrhoidal veins were first affected.
9. In eleven, in which the superficial veins of the leg were affected, the spermatic, together with the hemorrhoidal, were diseased.
10. In two, the spermatic veins were first affected.
11. In seven, in which the veins of one or both legs were affected, the epigastric, together with the hemorrhoidal and spermatic, were diseased.
12. In one, the epigastric was first affected.
13. In eight, in which the superficial veins of the leg were first affected, the external jugular, together with the hemorrhoidal, spermatic, and epigastric, were similarly diseased.
14. In one, in which the veins of the left leg were first affected, the cephalic of the corresponding arm, together with the external jugular, spermatic, both epigastric, and the hemorrhoidal veins were diseased.

Second Analysis.

1. In two, the epigastric veins were alone diseased.
2. In five, the external jugular veins were alone diseased.
3. In twenty-three, the spermatic veins of one or both sides were alone diseased.
4. In thirty-eight, the hemorrhoidal veins were alone diseased.

I have made *post mortem* examinations of many persons who labored under varicose veins, and am convinced, that in the mass of them, the internal jugular, innominatæ, pulmonary, heptatic, mesenteric, emulgent, iliac, and cavæ, have been larger and less thick, than in other cadavers of the same stature and age.

Exciting Causes.

Every surgeon, it may be presumed, is acquainted with the fact, that any thing which prevents the return of venous blood to the centre of the circulation, tends to produce varix; but a circumstance in connexion with this, not sufficiently attended to, is, that according to the influence exerted by any combination of the predisposing causes, so will the extent of disease be, from the same force exercised by any given proportion of the exciting causes; thus, "*those things become equal to the things that produced them.*" We may illustrate the matter in this way: If, in consequence of gestation, two women labor under dilitation of the superficial veins of the leg, and one of them by the laxity of her venous system, is predisposed to phlebectasis, after delivery, the venous dilitation will remain and increase; whereas, in the other, in whom there is no predisposition, the dilitation will subside.

In many instances, when the pressure is continued for a length of time, though there be no disease actually predisposed to, yet the continued exciting cause becomes equal to a due predisposition, as far as the part affected is concerned, so that when the cause is removed, the effect continues, and operates as a cause in producing, after the same manner, an increase of the disease. Thus, we sometimes see dilitation of the jugular veins, in those who have for years played on wind-instruments, continue after they have abandoned their occupation, and in situations, too, where a cessation of the disease is favored by gravity.

A cause of phlebectasis, little attended to, is sub-acute inflammation. This inflammation may take place either in the trunks or branches. For the most part, it is produced by cold and wet, but not unfrequently by injury. From accurate and extensive observation, I am satisfied that the disease is much more common among the Irish than the English; which I am inclined to believe, arises from the unavoidable practice of going barefooted, entailed by poverty of the former class of people. Their feet are continually cold and wet, and the consequence is, hypertrophy of the middle tunic of the venous branches; a disease which extends gradually towards the trunks. Horse-jockeys and postillions are very liable to this disease; and, I have heard one of the very best clinical surgeons ascribe it to the boot-garters, with which they firmly bind their legs below the knees. Though I do not, *in toto*, deny the validity of this assertion, I must certainly state what I conceive to be the true cause in this class of men. I have examined three dead and nine living subjects, who had pursued one or other of the occupations alluded to, and in them there was no proportion between the hypertrophy of the internal saphena, from the lower third of the thigh to the calf of the leg, and the rest of its trunk and branches; nor did there exist a like ratio in their dilitation—the portion of the trunk specified, being the most thick, and less dilated than the veins below it. Moreover, in all the postillions, (six) except one, the left leg was alone affected. I have mentioned this curious fact to several surgeons, and many of them have endeavored to explain it, by alluding to the pressure which the sigomoid flexure of the colon makes on the left iliac veins; but this explanation, to me, at least, does not appear sufficient; as, under the influence of such a cause, all the veins below the point of pressure, ought to be equally diseased. To be short, I am rather inclined to believe the disease is produced by the pressure and friction, which, from the peculiar seat they necessarily take, is thrown forcibly on the internal saphena, where it traverses the upper part of the leg and lower part of the thigh; and moreover, these causes act very powerfully, as from the contraction of the muscles of this extremity, which he alone employs in elevating the body, the blood is forced from the deeper seated into the superficial veins; but what particularly convinces me, is, that the postillion who had the disease in the right leg, was in the habit of riding the *off*, or right horse, in so much as he was *left-handed.*

On the Progress of the different species of Phlebectasis.

This disease may commence in one of two different ways,—either by dilitation or induration. It begins by dilitation, when the predisposing causes alone operate, when the recurrent circulation is retarded, when both are combined, or when injury causes active inflammation, and total or partial obliteration of the main vein. It commences by induration from subacute inflammation, induced by cold, wet, or injury.

Dilatation, for the most part, commences at the extremities of the veins, in consequence of the pressure of the blood, being an obstacle to the recurrent circulation. Not unfrequently, however, the dilitation commences in a trunk, and then it is, where a large vein is emptying itself into a deeper seated one, as the greater sephena into the femoral, or the lesser sephena into the popliteal. This is induced, first, because the friction is greater in such situations than elsewhere, in consequence of the meeting of the currents, by which the circulation is necessarily retarded, and secondly, by the pressure of blood directed on the sephinal, through the medium of muscular contraction. However, it matters not, whether the dilitation commences in the extremities or trunks of the veins, for both will soon be similarly affected.

In proportion as a vein dilates, so it becomes tortuous, or it is extended in a longitudinal as well as a transverse direction. In proportion to its tortuosity, so is the circulation through it retarded, because the surface of friction is increased. This unnatural state of the vein gives rise to inflammation, and the consequence is thickening and induration of the middle tunic, so that the vein, when removed, does not collapse from atmospheric pressure, and in every respect, except the absence of circular fibres resembles an artery. This hypertrophy so destroys the power of accommodation in the vessel, that the blood is much retarded, which, by producing an increase of distention, gives rise to an augmentation of disease. In some individuals, this change takes place much more rapidly than in others.

When this disease has existed for some years, the veins become dilated in many places. These dilitations take place for the most part, at those points where the veins are encurvated, because, here the surface of friction is increased; and the curves mechanically obstruct the free transmission of blood. The dilitation is always partial, at least, I have never seen it occupy the whole circumference of a vein,—it has always been either external or lateral; and this can easily be accounted for, by the greater pressure which these parts must necessarily undergo during the contraction of the muscles. Some persons, and of good authority too, on surgical subjects, have asserted that these dilitations are always in the site of the valves. This may be the case in a number of instances; but I am far from believing that they depend either upon rupture of the valves or internal membrane. I have frequently observed that the valves were stretched to a mere line; but I have never seen any case to lead me to believe, that even one of them had been ruptured, or gave rise to the dilitations; for I have satisfied myself by repeated examinations of the dead, that there are in well-formed cases, more dilitations than valves, and that the dilitations exist where the valves do not; and, moreover, the condition of the valves in the different cases, appeared to depend on protracted disease, rather than accident.

The parieties of these dilated venous portions are thinned in proportion to the amount of dilitation; for the strong pressure occasioned by the accumulation of blood in them, creates absorption, and the superincumbent cellular tissue and skin suffer in the same manner. When this process is further advanced, the outer and middle venous tunics, and the subcutaneous cellular tissue, are removed by absorption, and the inner tunic of the vein adheres firmly to the back of the dermis. Finally, if proper means of relief are not had recourse to, the absorption continues until the internal tunic of the vein and dermis are destroyed, when alarming hemorrhage ensues. I have just now asserted that the internal venous tunic, is the last to give way, and this I have determined by dissection. I have also ascertained that soon after the general venous dilitation commences, this tunic obtains so much in extent, that it becomes plicated; that where the dilitation is general, the plici follow a longitudinal direction; but when the dilitation is partial, and abruptly augmented, they pursue oblique courses, and in excessive cases are obliterated.

When the disease commences by induration or hypertrophy of its branches, dilitation soon follows; because the blood is retarded in proportion as these branches resist the pressure of the atmosphere; and consequently, the contraction of the muscles forces, into these rigid tubes, blood, which they do not easily expel. Add to this, that in proportion as the diseased veins cease to circulate their contents, so are the healthy veins in the neighborhood overworked, and like a heart, which has too much to do, become affected with hypertrophy and dilitation. Where the induration takes place in the trunk, as in postillions, it induces dilitation of the branches, by resisting more or less, according to the thickening of the venous walls, the return of the blood.

I have observed two cases, where the blood had coagulated in varicose veins, and obliteration was going on, so as to impede the transmission of the ascending current. The celebrated clinical surgeon, Delpech, has treated of coagulation in varicose veins, and has asserted that the coagula act on the inflamed parts, as foreign bodies, and produce ulcerations; but that hemorrhage does not ensue, because the veins are obliterated. (*Precis des Maladies Chir. tom. iij*) Though I admit that in some few cases, the blood does coagulate, still I cannot assent to the foreign influence claimed for it by Delpech. When a ligature is applied to the sephena, do we observe such changes immediately above it? Do such changes ensue when an artery is tied? Are they observed in the chambers of the heart, when coagulation has taken place to a considerable extent before death? Indeed, we have no proof, direct or analogical, in favor of his assertion. To settle the point to my satisfaction, in seven cases where the sephena had been varicose along the calf of the leg, I placed two ligatures, as light as I dare, without cutting off the circulation of the limb, one below the calf of the leg, and the other below the knee, and continued the application from twenty-four hours to a week, without being able to produce an ulcer in the intermediate space.

Observations on the Treatment of some Forms of this Disease.

In consequence of enlargement of the veins, the leg at one time becomes inflamed and ulcerates; and at another, painful and œdematous. Under these circumstances, surgeons enjoin quietness, administer purgatives, and make pressure on the diseased veins. These remedies, they all admit, are not very effectual; but they prefer them, since, by experience, they have been convinced that the other methods which have been practised, are fraught with imminent danger.

That the disease is susceptible of better treatment, I shall how endeavor to show:

Ligature of the Sephena.

Though many good surgeons performed this operation before Sir E. Home, none of them gave it the currency which it obtained through his recommendation; but, from the common occurrence of phlebitis after the operation, I may say that it has nearly fallen into disuse. The phlebitis, undoubtedly, arises from the injury inflicted on the tunics of the vein by the pressure of the ligature. To avoid such evils, and, at the same time, to accomplish the desired end, I have five times practised, with perfect success, the following operation:—An incision being made, for an inch or more, along one side of the vein, a suture needle is passed beneath it, and through the integuments on the opposite side; then the ligature is tied in a loop on the cutaneous surface, so as to keep the sides of the vein in contact, without producing the slightest laceration. On the sixth day, the ligature, may be withdrawn.*

Incision.

Mr. Brodie, in the Medico-Chirurgical Transactions, recommended the division of the larger groups of the dilated venous branches, as the most appropriate operation; because he found that the branches could bear with impunity an injury which the trunk could not.

If Mr. Brodie has not seen bad consequences succeed to the operation he has performed and recommended, I am sorry I have reason to testify to the contrary; for I have seen phlebitis and sanguineous extravasation terminating in suppuration, and even both combined, succeed to it. These consequences may be avoided by operating as follows:—Let the patient be placed in the erect position, on a firm table, of the ordinary height; direct him to bear all his weight on the diseased leg, and merely to balance himself with the other, which he should rest in a pointed direction on the table, about a foot anterior to the centre of gravity. By this position, the diseased veins are rendered turgid, and the inside of the leg is fully exposed; two points absolutely necessary for the happy completion of the operation. The operator should then take a compress, three inches in length and one in breadth, and place it transversely, immediately above the group of veins which he purposes to divide;—an assistant standing on the outside of the leg to be operated on, should not only make pressure on the pad, but on the internal half of the limb. By this procedure, the entrance of air is prevented, a circumstance disposed to by the rigidity of the diseased veins. The operator should use a knife an inch longer, more curved, and less thick and broad, than that recommended by Mr. Brodie. Standing before or behind the patient, as from the situation of the veins he may find it most convenient, he introduces the knife in the ordinary way, and from the length of the instrument, he can easily bring its extremity to the distal side of the group, a point which I have sometimes failed in effecting with the instrument sold in London, under the appellation of Brodie's knife. This step of the operation being achieved, the surgeon should direct the edge of his knife either obliquely upwards or downwards, as he may find it most convenient, and then withdraw it, at the same time elevating the handle, or increasing the angle between the limb and knife, and pressing it so forcibly backwards, as to ensure the complete division of the group. The narrower the blade of the instrument the more easily is it turned, the thinner it is the more keenly it cuts, and the greater the sweep at its extremity the more correct is the cutting principle, in the stage of operation just described. I have directed the edge of the knife to be turned obliquely, not directly backwards; because, from the sweep of the blade its point would project through the skin in the process of turning, and thus encumber the operator. I have seen some surgeons fail in dividing the group, and, of course, in the object they had in view; and to prevent such a failure, I have seen two of them divide the integuments in front of the group, so as to ensure its perfect division; but with the modified knife I have recommended, and the precautions I have stated, the judicious operator will find no necessity to have recourse to what I consider a useless proceeding; nor do I believe that the consolidation of the divided skin and veins, *en masse*, to be an essential object, though I respect very much the talents of the promulgator of this method. When the knife is withdrawn, I allow the blood to flow until symptoms of syncope begin to appear; then, I have the patient placed in a recumbent posture, and apply a firm compress and bandage. Thus, the loss of blood keeps down phlebitis, and does away with the danger of extravasation. I have now performed this operation thirty-eight times, with perfect success, and without a bad symptom. I prefer this method to ligature, because it is performed with more ease, perhaps, too, with more safety;. and moreover, I have often observed in my own and others' patients, that the pain of the varices was increased for a time by the ligature; on the contrary, that incision, when performed as I have advised, afforded immediate relief.

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* I have extended this method of operating to the dorsal artery of the penis, the temporal, lower third of the radial, and brachial arteries, with equal success. May not this procedure be preferable to the use of the *presse artere*, when the vessel is diseased?

Excision.

After some reflection, I began to think that in those cases where the sephena was considerably dilated, as it is turning over the semilunar edge of the fasciæ lata to dip into the femoral, a cure might be effected by obliterating the sephena below the point of dilitation. This I twice effected by ligature applied as I spoke of before. Then, it occurred to me that the the cure would be equally as certain, more safe and expeditious, by excision of a portion of the vein. I have now performed this operation three times successfully; though in each of these cases, the portion of the vein operated on was diseased. I first apply a roller from the toes to near the middle of the thigh; then I place a firm compress over the course of the vein, immediately above the place of the intended incision, and consign it to an assistant, who keeps up a steady pressure until the operation is completed. I now make a division of the skin parallel to the inner edge of the vein, and after having separated the integuments from it, with a probe-pointed scissors I divide the trunk at two points, each half an inch apart; the portion thus included, being removed, the edges of the wound are brought into contact, and so retained by an oblong compress applied transversely, which, together with the one in the course of the vein are retained *in situ*, by a roller firmly applied, and continued from the termination of the first, upwards. The patient is then placed in bed, in the same position, as after the operation for popliteal aneurism.

About three months since, I performed this operation, for a tumor of the sephena, as large as a pullet's egg, situated in the groin; the portion of the vein divided, was much more capacious than natural, and as rigid as an artery—nevertheless, no bad symptoms followed the operation, and in three weeks the tumor was scarcely perceptible.

When the posterior sephena becomes enlarged, indurated, twisted, &c., the ligature cannot be applied, in consequence of the great tortuosity of the vessel, incision would endanger the nerve and vessels of the popliteal space, and from the motion of the knee, pressure, which as I said before, is generally had recourse to, cannot even palliate disease here, because of the mobility of the knee-joint, and the action of the hamstring muscles. Excision, then, seems to be the only feasible means of relief. I have performed the operation in this situation in the following manner: The patient being placed on his back, and the leg extended, an incision is made for two inches on the inside of the diseased vein; then the finger is thrust beneath the massy convolutions formed by it, and brought out at a corresponding point, on the opposite side, where another incision of the same extent is made; then, an assistant thrusts a compress into the upper part of the popliteal space, and fixes it firmly. On this being effected, with one stroke of the knife, I sever the skin and veins at the lower extremities of incisions, and reflecting the flap upwards, dissect out the veins; the convoluted portion of the integuments are replaced, and retained *in situ* by a firm compress and roller. In one case, the integuments were so thin, and adhered so firmly to the vein, that I dissected the greater part of the reflected portion away, and the case terminated as favorably as the others. About four months since, I performed this operation on a gentleman from Connecticut, who, by the advice of Dr. Mason, put himself under my care. The tumor was as large as a split orange, and when he stood erect, formed a frightful mass of disease; but what created most alarm, was that in two points, the parieties of vein and the skin, were so thinned as to threaten rupture. With the assistance of Dr. M., and some other professional gentlemen, I operated, and in one month, my patient returned home perfectly well.

When the operations recommended in this essay are performed with the precautions laid down, I do not believe that they are likely to be dangerous. On the other hand, I should be sorry to be understood as saying that they are always permanently beneficial; for such an assertion would be at variance with what I have said of the predisposing causes. But to end all disputes, I would recommend operation, when the varices are painful and attended with œdema or ulceration; for after its performance the evils cease; and I have seen many cases, in which, after operation, a return of the disease was prevented by the roller or laced stocking.

To conclude, I have tried the plan of Graffe, and Ghelius, and consider it fraught with danger and uncertainty. I have also used the caustic, and am disposed to consider it less certain, and far more barbarous than the red hot iron, so lauded by Celsus.

A Truss for the cure of this disease.

To several persons who had the venous tumor in the groin, and were unwilling to submit to operation, I have recommended the use of a Truss, with a pad slightly convex, about the size of a dollar, and connected by a vertical sliding bar of an inch in length, with the ordinary circular hoop. This means I have found to palliate the disease more than any other, and would therefore, recommend it strongly to the profession. EDITOR.

GLEANINGS FROM FOREIGN JOURNALS.

Westminster Medical Society, Saturday, March 10*th*, 1831.—*Mr. Chinnock in the Chair.—Recidive Case of Stone in the Bladder.—In the first instance Lithotomy was performed; in the second, the cure was effected by Lithotrity.*

MR. COSTELLO, the fellow-laborer of M. Civiale, of Paris, the discoverer of the new method of operating for stone, was present at a late meeting of this Society, and read an account of an interesting and successful case of lithotrity. Mr. Costello began by stating that, having at one of the preceding meetings asked permission to make a communication to the Society, and, from unforeseen circumstances, having been unable to terminate that paper, he was anxious to avail himself of the permission so kindly granted, and would therefore relate a case of lithotrity, which, as it exhibited the new operation in a light in which it had not been hitherto presented in England, he hoped would be found not uninteresting. Since the introduction of the new operation into this country, (pursued Mr. Costello,) although received by British surgeons in a spirit of liberality which reflects honor on the profession, it nevertheless has experienced, and continues to meet with numerous obstacles, and honest doubts are entertained as to its possessing any real superiority over the old operation, which in the vast majority of cases, it aspires to supersede. Over and over again, nay, in this very room, it has been urged to me, "That the cutting operation, as it is now practised, although terrible to endure, is nevertheless equally successful with lithotrity in favorable cases;" and this observation is followed up by the question, "Why then introduce a novel mode, which cannot be more successful than the old one, and which has this disadvantage, that the majority of operating surgeons, from want of opportunity, can never become sufficiently familiar with it?" This objection, if it be seriously meant as such, is established on a partial view of the subject. I had the honour of submitting to the Royal Society last June, a series of cases successfully treated by lithotrity, in which I endeavored to point out the gradations of difficulty which accompany its application, proceeding from the consideration of simple cases, to that of cases of a more complicated nature. On that occasion it was demonstrated on the peremptory evidence of facts, that in the former, namely, the simple cases, in which the calculi are of recent formation, few in number, and the urinary organs still healthy, the cure was always easy, safe, and attended with very little pain.

Although it is not my intention on the present occasion to enter into a parallel of both operations, especially as I have treated this view of the subject in another place, nevertheless I shall endeavor to sketch rapidly a comparison between them, before I come to the relation of the case which I am about to submit to the Society. Having laid it down as a principle that lithotrity, applied to simple cases, *always* effects a cure, without exposing the life of the patient, and without inflicting much pain, it may be worth while to examine whether the difference between both operations are limited to the mere pain inflicted in lithotomy, still observing, that if it were so, it would form a consideration of no small importance. Let us take a case of the simplest, the most favorable description, and we shall find, even under the most advantageous circumstances, that lithotomy is attended with dangers which can neither be undervalued nor overlooked,—dangers from which it cannot be exempted, even when performed by the most skilful hands. In order to confine our attention exclusively to the operation, we shall leave out of view the habitual despondency of this class of sufferers—the terrors inspired by the preparations for its performance—the binding hand and foot—the cruel anguish of anticipation. The lithotomist has to penetrate by successive incisions, of several inches in length, into a cavity, placed at a depth from the surface, which varies according to the condition and age of the patient, from an inch and a half to four or five inches; these incisions must be made with the greatest care, and within limits, any deviation from which may be followed by the most serious consequences. Through the wound thus made, divers instruments are introduced for the purpose of seizing and extracting the stone, which is now no longer free within the organ, for as soon as the opening is made in the bladder, the urine which it contains gushes out, and the viscus immediately collapses, nay, sometimes powerfully contracts on the stone. This renders the extraction difficult and excessively painful. But this is not all; the incisions made for the purpose of affording an aperture through which the stone may be removed, are necessarily limited. In the lateral operation, which, as it is the most common in use, we are here considering, it is now recommended by some of the first authorities, Liston, Key, Velpeau, Dupuytren, &c. that the incision of the prostate shall not be carried to its circumference on the left side; but that a portion of it shall be left undivided by the point of the knife, with a view to prevent infiltration of the urine into the cellular substance external to it, as also to insure a more speedy cicatrization, by a better coaptation of the divided parts. Now the whole thickness of the prostate at its side is not more than ten lines, not quite an inch, to which, if we add five lines for the diameter of the urethra, we shall have an incision of an inch and a quarter at most. This, for a safe operation, is the utmost limit to which the incision ought to be carried. If, unfortunately, a disproportion exist between this aperture and the body to be extracted, the difference must be made up by a dilitation, which is merely a milder name for laceration, and thus is the operator forced to imitate the so-much-condemned manœuvres of the terrible *apparatus major*. In such a case the calculus cannot be extracted without injury to the parts through which it has to pass. The violence employed for this purpose, too, frequently compromises the success of the operation. According to the authority of Mr. C. Bell and Mr. Samuel Cooper, nine out of ten of those who perish by lithotomy, are victims to the laceration effected in the extraction of the stone. The sources of hæmorrhage from this operation, are too well known to require any particular indication of them; suffice it to say, that however cautious the lithotomist be, he can never be perfectly guaranteed against this accident. But let us suppose the incisions safely performed, and the stone extracted at once, if there be but one stone, or by repeated introductions of the finger of the operator and his forceps, if the calculi be numerous,—all the danger is not passed; the patient has other dangers to encounter. If the cellular substance external to the prostate have been torn or divided, an opening is made for the infiltration of urine between the bladder and pubis, between the bladder and rectum, and thus on to the peritoneum itself. The cellular tissue becomes inflamed, this inflammation extends to the peritoneum, and a fatal termination is often and promptly the consequence. Another consequence of this operation is the inflammation of the kidneys, which, under the circumstances, is almost always fatal; and, lastly, the inflammation of the bladder itself is to be dreaded. M. Boyer attributes to this cause the death of three-fourths of those who succumb from the operation of lithotomy. These are some of the most formidable dangers which the unfortunate sufferer has to encounter. I shall place in the second rank, when the operation does not terminate fatally, his liability to the distressing infirmities of fistulæ, incontinence of urine, &c.; and lest this *exposé* should be deemed exaggerated, I shall say nothing of the lesion of the rectum, vesiculæ seminales, &c. but confining myself to the remark, that under whatever circumstances lithotomy is performed, it is always the commencement of a long and dangerous illness, of which the issue is doubtful, I hasten to lay before you the details of the case which has given occasion for these reflections.

Mr. Thomas Heath, a farmer, residing at Kirkby, near Mansfield, Notts, aged 57, corpulent in habit, experienced the first symptoms of stone in the bladder eight years ago. He had pain in the loins, thighs, and neck of the bladder, accompanied by frequent calls to void his urine. These pains were occasionally very severe, whenever he walked much, or labored hard. Being a single man and of bashful disposition, he bore his sufferings in silence for two years, and took no advice. At this period he made a short journey on horseback to pay his rent, and having, contrary to his habits, partaken of the punch prepared for the tenants, he became much alarmed at finding that he was unable to pass a drop of urine. This retention lasted five hours, and his return home was attended with acute suffering. He was confined to bed for a week, and frequently voided blood with his urine. At the end of this time he passed a small lentil-shaped stone about the size of a pea. Its expulsion was followed by immediate relief. His freedom from pain, however, was of short duration. His symptoms returned, and he continued to suffer severely for the next six months; but still the urine was nearly natural, and he was able to move about. He became worse, and during the two years which preceded the first operation, his life was a long torment. The urine became turbid and bloody, and in severe crises it deposited a quantity of slimy mucous, which adhered to the pot. Life being a burden, he made up his mind to undergo the operation. For this purpose he repaired to Nottingham. The operation was performed on the 7th of November, 1827, by Mr. Attenburrow, a distinguished surgeon and lithotomist of that town. Owing to the size of the stone and the depth of the perineum, the operation was long and laborious, and there was considerable hæmorrhage. Seven weeks from the time of its performance, he was able to return home; but his convalescence was slow, and the wound was not completely cicatrised till the end of March. His respite from suffering, however, was of short duration. In April he felt the renewed attacks of his disease, and in June all his old symptoms had re-appeared. He had submitted to the operation in the hope of permanent relief. He saw with despair that he had obtained but a short truce, and that he was once more a prey to the protracted martyrdom of stone. The operation was again spoken of, but nothing could overcome his repugnance to submit to it. In the month of November, he passed another small rough calculus, but experienced no diminution of suffering. During the two following years his torments were indescribable. Through Mr. Nathan Cooper, of Mansfield, his surgeon, he learned that there was a milder method of cure for his disease, and at the recommendation of Mr. Grainger, who spoke favorably of lithotrity, and the Hon. and Rev. Mr. Vernon, rector of his parish, he came to town. When I first saw him, his condition was truly deplorable. The slightest motion was productive of intense pain; his breathing was short, even to panting; his sleep was broken, the irritability of the bladder being so excessive as to force him to make water every ten or fifteen minutes throughout the entire night. His mind was so broken that he shed tears on the slightest emotion. The urine was ropy and fetid. With such a formidable train of symptoms, I had doubts of the applicability of lithotrity. Opiates were ordered, and a soothing treatment was adopted. This was attended with such good effects, that the number of calls to make water was reduced at the end of a few weeks to twelve times in a night. When the irritability was thus diminished, the operation was begun. The first sitting took place three weeks ago. An injection of four ounces of water was thrown into the bladder, a large lithotrite was used, and the stone, measuring an inch in both its diameters, was seized. Three perforations were made in it, before it was suffered to escape from the grasp of the instrument. It was seized again, and reduced to large fragments by the pressure of the branches and drill. This sitting lasted ten minutes. The night following the operation, he made water only seven times. There was nothing remarkable in the introduction of the lithotrite, except that it produced pain in passing over the old cicatrix of the urethra. At the second sitting, the water escaped between the urethra and lithotrite. Only one fragment was seized and crushed. The operation lasted one minute. At the third the bladder was tranquil, and fragments were seized and broken seven times. At the fourth, very few were found, and at the fifth, only one, which was extracted in the instrument. The two last sittings took place at my own house, and it is now but three weeks since the operation was commenced which has raised up Mr. Heath from a bed of torture. He is here this evening, gentlemen, to confirm my statement, and to answer any questions you may think proper to put to him. You see before you in these five paper boxes, (Mr. Costello pointed to the boxes, which were placed on the table,) the fragments of the stone. I have kept them apart, that you might see the product of each sitting. It was impossible to save all, as the patient walked about town during the latter part of his treatment, but what has been collected would form a pretty good sized stone.

Mr. Arnott begged to ask the patient whether the operation was productive of considerable pain. He had attended with a surgeon in town in a case where lithotrity had been attempted; the patient who was afterwards cut, affirmed that he had suffered much more in the unsuccessful attempt at lithotrity, than from the performance of lithotomy; he therefore begged to ask Mr. Costello if this was usually the case.

Mr. Costello replied, that in simple cases lithotrity was by no means a painful operation. The mechanism of the operation opposed the idea that much pain could be inflicted by it. The bladder was distended with water, the instrument expanded in the fluid, and, except while seizing the stone, was only in contact with the urethra. The manœuvres exercised could not in any manner be productive of the pain of cutting. Mr. Costello was aware that surgeons, not familiar with the manual part of the operation, might inflict a great and unnecessary pain in the attempt to perform it; but then it was not fair that the credit of lithotrity should suffer from their inexperience. In the numerous cases which he and his friend Civiale had treated, he had never heard any such reproach addressed to lithotrity. He had, however, heard from Mr. Liston, of Edinburgh, whose candor was well known, that the patient on whom he attempted lithotrity, had suffered more than he did subsequently from the performance of lithotomy.

Dr. Barry wished to know the name of the surgeon to whom Mr. Arnott alluded.

Mr. Arnott begged to decline giving an answer.

Dr. Barry thought it was useless to theorize on the matter, since there was a gentleman in the room whose opinion was founded on experience, who of course must know more about the pain it produced than any one else; he would therefore beg Mr. Heath to state, if he were unfortunately to have stone again, which operation he would prefer.

Mr. Heath with great earnestness of manner replied, "I would not be cut. I have suffered from stone for whole nights together, much more than I did from Mr. Costello's operations, which never exceeded a few minutes. The operation is not performed without pain, but then it is trivial indeed compared to cutting."

Mr. King was of opinion that great praise was due to the candor as well as to the dexterity of Mr. Costello. He would take that opportunity of expressing the disgust he experienced at an attempt which was made to deprive Mr. Costello, an Englishman, of the merit which was justly his, of introducing his truly valuable operation into England, and to attribute it to a foreigner; he alluded to the delivery of the Hunterian oration by Mr. White. Mr. Barnett said he had seen other lithotritic instruments, which he considered as great improvements upon those of Civiale.

Mr. Costello replied, that the value of these instruments was in their simplicity and solidity, both which essential qualities had been impaired by the modifications which Mr. B. considered improvements. There was one fact which he would state, that spoke volumes in favor of his instruments. It was this, "that of the five systems or modifications of the lithotritic apparatus, which had been presented since the invention, the only one that is known by experience, is Civiale's." Mr. B. might think that those modifications were improvements. Mr. Costello declined entering into a controversy on the subject at present, but he would take some future opportunity of proving, that so far from being improvements, they were complicated and dangerous, and inapplicable to the performance of lithotrity.

Mr. Costello showed the instruments with which the operation had been performed. Thanks were returned him for his interesting communication.

Clinical Lecture, delivered by Dr. Corrigan, at the Charitable Infirmary, Jervis-street, Dublin, April 13th, 1831, on Spinal Irritation.

Gentlemen,—Were I to be asked what is the greatest improvement in practical medicine that has taken place within my recollection, I should unhesitatingly reply—it is the discovery of that singular form of disease of which the case of Sheridan, lately in the Hospital, is a good example. For this increase of our knowledge, we are mainly indebted to the labors of the Messrs. Griffin of Limerick. Other improvements may have been more brilliant, but there has been none so useful. Laennec's immortal labors have revealed to us a very much improved knowledge of the morbid anatomy of some of the internal organs, and an accuracy of diagnosis in the diseases of those organs, beyond what it was possible to anticipate; but it must be confessed, that with this improved knowledge of morbid anatomy, and increased powers of diagnosis, our means of preventing the incursion of the disease, or our powers of removing it when once set in, have not kept pace. Not so in the instance before us. The discovery of the seat of the disease and its diagnosis, have brought with them a mode of treatment at once scientific, simple, and efficacious. To this form of disease, the name of spinal irritation is properly given. Any name would be objectionable which might carry with it an implied notion of any peculiar change of structure or of action, for as yet we know little, or, indeed, nothing of the peculiar action which constitutes the disease.

The name spinal irritation, as merely expressing what is the most striking characters of the disease in its numerous varieties, is probably the least objectionable name we could select.

On the present occasion, we shall follow the plan I have already recommended in the consideration of all diseases—keeping three objects always steadily in view. First, the nature and seat of the disease; Secondly, its symptoms; Thirdly, its treatment. And first,—What is the disease, its seat, and its nature?

To reply to this question, we naturally, in the first instance, turn for an answer to morbid anatomy; but morbid anatomy gives us here little information. For this there are many causes. The knowledge of the singular form of disease under consideration, is of recent date, and hence its pathology has not as yet obtained its due share of attention; moreover the disease, although giving rise to most distressing symptoms, and rendering life miserable, is seldom of itself fatal, so that the opportunities of post-mortem examination are rare. There are other causes in operation, which further tend to render it unlikely, that from the knife of the pathologist we shall ever in the instance before us obtain much information. It is especially a character of diseases of the nervous system, that the morbid changes presented after death, do not at all correspond with the intensity of the symptoms observed during life. In poisoning from prussic acid, in some of the most distressing and terrible of the affections of the nervous system, for instance, hydrophobia and tetanus, we either find no lesion after death, or morbid changes so slight, that we repeatedly meet with similar, or changes even of greater degree, in the bodies of patients who, during life, had exhibited no similar symptoms. For these reasons, even if we possessed opportunities, it is not likely that in cases of the disease before us, we should ever find any notable change of structure; and, moreover, the symptoms in many cases come and go with such rapidity, as to forbid us to believe that they are necessarily connected with any change of structure, or that they are any thing more than a perversion of function.

It fortunately, however, happens, that we have other means than those afforded by morbid anatomy for ascertaining the seat of the disease, and by which we can, even during life, trace most distinctly the connecting link between cause and effect, or, in other words, between the diseased action and its symptoms. If we meet a patient complaining of hemicrania, or of pains in the neck and face resembling tic douloureux, and that we can produce or aggravate these distressing symptoms by pressure on the cervical vertebræ;—if we find another complaining of fits, of suffocative breathing, palpitation of the heart, and distressing sense of weight behind the sternum, and that we bring on, or aggravate, these symptoms by pressing on the dorsal vertebræ;—if we find another complaining of pains in the epigastrium and both hypochondria and globus hystericus, and of flatulent distension of the stomach, and that we can at any time bring on or aggravate all these by pressure on the lowest dorsal vertebræ;—if we find pains complained of in different parts of the body, in the right or left mamma, right or left hypochondrium, or in varied parts of the abdomen, and that pressure on the part of the spine generally corresponding in situation to the seat of the pain, aggravates the pain, or produces it if previously absent;—if we find, moreover, that local applications over the spine remove the distant symptoms or pains, not relieved by any other mode of treatment;—the fair inference from all this surely is, that the seat of disease is within the spine, and the connexion between the symptoms and the disease, between cause and effect, is, in such cases, more clearly exposed before us, than when even after death from acute disease, the knife of the pathologist exhibits to us some important lesion of structure, of which, rigidly speaking, the most we could say is, that it was probably the cause of the symptoms during life. I shall now proceed with the relation of the case.

Case.

W. Sheridan, ætat. 27, coach-painter, but seldom used lead-paint; complains of great flatulence, of pain and tightness in the head, with pain at the scrobiculus cordis; countenance is pale and anxious; tongue clean; pulse 90; respiration rather more frequent than natural. There is pain along the course of the supra-orbital nerve of the left side. His sight is weak, and he cannot raise his eyes to any object above him, without experiencing pain and giddiness of the head. He is frequently attacked by "globus hystericus." He describes it as "a ball of some kind" arising in his stomach, and ascending to his throat, where he feels it choaking him; he also frequently experiences a sensation of tightness across the chest, which often prevents him from speaking when he wishes to do so. For the last two days he has had pain along the calf of the left leg, and weakness across his loins. His appetite is not impaired, but strength is much diminished. He has frequent pains across the epigastrium and both hypochondria, his nights are restless, and he starts often from his sleep, aroused by terrifying dreams; there is slight cough; epigastrium and both hypochondria are very tender under pressure, and pressure on the epigastrium produces instant cough and difficulty of respiration. The result of pressure along the spinal column is as follows:—pressure on any of the cervical vertebræ produces pain and lightness of the head; on the superior dorsal, produces tightness of the chest; on the inferior dorsal and first lumbar, produces pain at the scrobiculus cordis, flushing of the face, perspiration, and violent eructation of wind from the stomach; lower down produces no effect.

This case, gentlemen, came into the hospital on the 17th of February, and was discharged cured on the 4th of April. It was the most severe case of spinal irritation I have ever met with. Generally, only a small portion of the spinal chord is affected, with a corresponding limitation of the symptoms, but here the morbid irritability was extended from the upper cervical to the lumbar vertebræ. I stated, on taking in the case, that the treatment should be as simple as possible, in order to point out more clearly the seat and nature of the disease, and, in fact, with the exception of a simple aloetic or oily purgative, given occasionally to obviate or remove costiveness, the whole treatment consisted of rest, of local applications, cupping, leaching, blistering, and tartar-emetic ointment, to the spine. The patient, under this treatment, went on satisfactorily. Twice or thrice he had violent and sudden attacks of pain in the sides, or sudden distension of the stomach with air and "globus hystericus." Such attacks are not unusual in these cases; but however distressing and painful during their continuance to the patient, they do not call for any deviation from the line of treatment, beyond the exhibition, at the time, of a palliative or anodyne. In one of these attacks I saw this patient; without any perceptible cause he was suddenly seized with most violent pain under the left mamma. He writhed under the torture; his countenance was sunken, pale, and bathed in sweat, his skin cool, his pulse quiet, and on applying the stethoscope over the seat of pain, the respiration was heard quite natural underneath. A large dose of opium was administered; he soon fell asleep, and on the next morning at our visit all traces of the previous evening's sufferings had disappeared. Here I may digress to mention that in such a case, in giving opium your only measure of the quantity administered is to be the relief afforded. This man got ninety drops of the tincture, and the only effect was a cessation of pain, and soon after a quiet and refreshing sleep. It is to be observed that even in this aggravated case the patient never complained until questioned of the back, nor referred any of his sufferings to the spine, until a local examination was made. If, from the notes of this case, we detract the results of the local examination of the spine (and let it be remembered that attention to the spine is in such cases of very modern date) we shall find this case to be one which, according to its symptoms, should be marked as the hypochondriasis of Cullen, Good, and most medical writers, or as a case in many of its characters approaching very closely to hysteria. Good says, hypochondriasis is characterised by the following symptoms:—"Troublesome flatulency in the stomach or bowels, acrid eructations, costiveness, a copious discharge of pale urine, spasmodic pains in the head and other parts of the body, giddiness, dimness of sight, palpitations, general sleeplessness, an utter inability of fixing the attention upon any subject of importance," and "globus hystericus." Cullen's definition of hypochondriasis is, "Dyspepsia, with languor, sadness, and fear, arising from inadequate causes in persons of a melancholic temperament." These symptoms in their most aggravated form this case presented, and many of the cases which heretofore have been marked as cases of dyspepsia, hypochondriasis, or hysteria, are but cases of spinal irritation. It is unnecessary to remind you how inefficient have been all the modes of treatment recommended for them. This we can easily explain, as we now know that, at least in many cases, the disordered functions which were supposed to constitute one or all of those diseases were but effects or symptoms, and that the original disease was never reached by the remedies prescribed.

It would be utterly impossible to give a good description of the varied forms in which spinal irritation will exhibit its symptoms, or the different appearances it will assume. There is not an organ in the body to which the symptoms are not sometimes referred, nor a disease to which the frame is subject, that will not be simulated from the most whimsical form of hysteria, to the most dreaded attack of malignant disease.

The diagnosis of spinal irritation is generally not difficult. The disease attacks every age, but is most common from a little before the age of puberty to middle life, and is most frequently met with in females. It usually commences with a sensation of weight, or sometimes, as described by the patient, a sensation of emptiness felt behind the lower third of the sternum, which, after having remained perhaps for months, then gradually rises to absolute pain referred to the epigastrium, and spreading to both hypochondria. There is almost always costiveness from the commencement, but often the appetite is very good. In many cases the first symptom felt by the patient is a settled pain in the right or left side in the region of the liver or spleen, or lower down, in the neighborhood of the caput coli, or sigmoid flexure of the colon. This is so severe, and frequently so constant, that it is not unfrequently supposed to arise from organic disease of the organ to which the pain is referred, and patients are subjected to long-continued and harrassing courses of mercury.

As distinguishing these pains from those depending on organic disease, you will find that with these nervous pains there is not fever or wasting, in proportion either to the intensity of the local suffering, or the length of time the patient has been ill. As to positive signs, almost always in these cases, if you examine the spine by pressing gently on the vertebræ one after another, the patient, on pressure of some one or more of them generally opposite to the seat of the pain, will complain that at the instant of pressure the distant pain or peculiar sensation is suddenly aggravated. The same effect is produced by passing the fold of a towel dipped in warm water slowly along the spine. Why pressure on a vertebra should aggravate a distant pain, or why it should be aggravated by the application of a warm towel to the same vertebra, I cannot say. The facts have been, and are, every day before us. This one fact you must never forget, that among the various pains and symptoms, the patient will scarcely ever refer any suffering to the back, and will often feel very much astonished at your directing any attention to that part. Hence you must never take the patient's own assertion as to the state of the spine. There is another character of the disease not at all uncommon,—that the patient is quite free from pain when lying, but is immediately seized by it on taking exercise or even rising from bed. It happens, although very rarely, that pressure on the spine will not aggravate the distant pain complained of. I shall mention a remarkable case of this kind presently. In such cases, however, there is usually a sufficiency of the negative and positive signs already pointed out to characterize the disease. Patients seldom die of the disease, but it will continue for years, rendering life miserable, and by distressing the mind, and injuring the constitution of the sufferer, predispose to more fatal diseases.

The cause of spinal irritation are as varied as the symptoms. It may arise spontaneously; any irritation either mental or bodily will produce it. Whatever weakens the constitution or general health has a powerful tendency to bring on the disease. I have little to say on the treatment. This consists of rest, of leeching and counter-irritation over the spine, with the keeping open the bowels by a continuance of mild purgatives. I have seen little or no benefit from general bleeding, however intense the pain might be; indeed, the patients who suffer under this disease are usually of a weakened constitution, to which general bleeding is not suited. Counter-irritation must be kept up as long as the tenderness continues, and the best mode of making it is by tartar-emetic ointment; it is better I believe than cantharides. You can always keep up a constant succession of pustules, and thus a succession as it were of new impressions, which you will not do if you keep a blistered surface open. There is another disadvantage in the use of flies, that under repeated blistering the surface becomes so tender that you cannot say whether the pain from pressure is in the inflamed integuments or from the continuance of the diseased action. Tartar-emetic ointment always leaves interspaces where you can readily make the necessary examination. In the case under our care here I used both.

I shall briefly mention a few of the cases which have occurred to me, which will probably give a better idea of the disease, its causes, diagnosis, the form it assumes, and its treatment, than could be given by any abstract or general description.

Case.

The first case was one where the cause seemed to have been general debility. The patient was a lady who, after her first confinement, suffered for several months from great weakness. When I saw her, about five months after her confinement, she complained of severe cough, difficult expectoration, and distressing sense of suffocation; these symptoms, particularly the last, much increased in the evening. There were constant pains in both hypochondria in the epigastrium, and behind the lower third of the sternum. These pains were not increased by full inspiration, and only in scattered points of the right hypochondrium by pressure, Pressure on the last dorsal vertebræ aggravated them. Leeches were applied to the spine, and a recumbent posture was enjoined. On the next day she was much relieved of all her symptoms, and on the day following felt so very well, that she left the bed; and now the disease showed one of its most striking characters, viz. its connexion with change of posture. The exertion of dressing brought back all the symptoms in minor degree, although previous to rising from bed, no trace of the disease was observable. They again disappeared after short rest in a recumbent posture on a sofa. Rest was again enjoined, and the improvement again proceeded rapidly, convalescence being only interrupted by a walk a little too long, which, like the exertion of dressing already alluded to, produced a temporary aggravation of the symptoms.

Case.

The next case arose without any apparent cause. A female of healthy appearance complained of severe pain behind the inferior third of the sternum, extending into the epigastrium and both hypochondria; of bad appetite, acrid eructation, and costiveness. The menses were regular. The pains behind the sternum, in the epigastrium, and both hypochondria, were aggravated by pressure on the lower dorsal vertebræ. They were not felt on rising from bed in the morning, were present with varying intensity during the day, became generally very severe in the evening, and disappeared altogether soon after lying down. Her illness was, when I saw her, of about two months' duration. It commenced with a sensation of internal weakness referred to the infrasternal region where the most intense pain is now felt. A blister was applied over the tender spine, and infusion of Gentian with Epsom salts, given as a daily purgative. On the day after the application of the blister, all the pains had disappeared, and there has since been no relapse.

Case.

The next case I shall give to your notice, is one where the original cause seemed to be mental anxiety. The patient, a gentleman of about thirty-five years of age, complained of distressing paroxysms, which came on frequently in the course of each day, and often without any apparent immediate cause. The paroxysms commenced with a sensation of great distress, referred to some internal part behind the inferior third of the sternum, and rising from it upwards to the head; his eyes filled with tears, he became incapable of speaking, and his mental agony during the continuance of the fit was extreme. The paroxysm did not last more than a few minutes, and was then terminated by one or two heavy long-drawn sighs. The clapping of a door, an unexpected meeting of an acquaintance, or any similar trivial cause, was sufficient to bring it on. It seemed as if, in this case, the sympathetic ganglion, to which some refer the seat of the passions, was engaged, for pressure on the epigastrium was immediately followed by all the distressing symptoms already described. The third, fourth, and fifth dorsal vertebræ were tender, and pressure on them was attended with the same effects. A towel was dipped in warm water and passed slowly down the spine. The moment it came over the tender vertebræ, the same results followed as from pressure. The history of the case was this: About twelve months before, this gentleman suffered under much anxiety of mind from a weight of business; then, for the first time, he felt the sensations described, which never up to the time of my visit quitted him. The same treatment was prescribed as for the other cases.

Case.

The last of the cases coming under my own observation, which I shall mention to you, is very instructive; it was one of those rare cases in which there was little or no tenderness over the spine. A lady, æt. 50, came to town for advice with the following symptoms:—She felt severe pain about the umbilicus, and in the left lumbar region; this pain was always brought on, or greatly aggravated, by taking food; relief was obtained after a meal by lying down, and the pain which remained present during the day always ceased soon after retiring to bed at night; the abdomen was soft, and the digestive functions well performed; the spine had two lateral curvatures; there was a little tenderness, under pressure, of the two last lumbar vertebræ, but pressure on them did not bring on the pain of side. The history of the case was this: having previously suffered under great depression of spirits, consequent on the death of several of her children, this lady first felt, about three months before, some uneasy sensations about her shoulders, which obliged her to rest her back when knitting or sewing. These were followed by pain in the region of the liver, extending into the right hip, and, finally, all seemed to concentrate themselves in the intense pain of the left side already described. For the pain in the region of the liver, she had been put under a course of mercury, and finally, from a fear that malignant disease of the stomach, or some of the organs in its immediate vicinity, was setting in, she was put on hemlock, and repeated blistering was ordered over the seat of the pain. All these measures failed to give relief. The first circumstance that made me look upon this case as one of spinal irritation, was the remarkable effect of posture. Moreover, there was not fever, nor wasting, in proportion to the intensity or the duration of the pain. Leeches were applied to the spine, and afterwards counter-irritation was kept up by tartar-emetic ointment. Two grains of sulphate of iron were at the same time ordered as a tonic, three times a day, and her bowels were kept open by Rufus's pill. Rest was of course enjoined for a few days. From that time up to the present, and several months have elapsed, there has not been a return of the pain in the slightest degree.

I have mentioned to you, that one of the most important facts to be attended to in cases of spinal irritation is this, that the most distressing symptoms are not referred to the seat of the disease, but to distant parts, to the extremities of the nerves, generally those taking their origin from the part of the spinal marrow affected. There is in the Medico-Chirurgical Review for this month (April) a case so strongly confirmative of this, so well calculated to impress this fact strongly upon your minds, that I think it well worth bringing before you. The case is headed "Disease of the Spine."

Case.

"Wm. Danyer, ætat. 29, a miller, was admitted into St. Thomas's Hospital, July 8th, 1830. He stated that he had taken cold four weeks ago, after which he had been attacked with pain of the back between the shoulders, and also sensation of stiffness and weakness in the knees and ankles. He says that the pain of his back sometimes shifts into his sides; and also describes his knees and ankles as being much easier when warm in bed. In other respects his health is pretty good; he eats well, sleeps tolerably, pulse 80, and weak. Having no paralysis or deficient sensibility at this time, and referring his ailments so entirely to his joints, coming on after cold, his case was considered to be simple rheumatism; he was, therefore, ordered the warm-bath every evening; tinct. guaica ammon. ʒ iss, 6tis. horis, and sulph. quin. gr. ij. 6tis. horis. 17th. No amendment; has been taking the medicines regularly as above prescribed, together with the liniment; sinapisms to the knees. He is ordered to increase the dose of tinct. guaiac. amm. to ʒ ij, and the sulph. quin. to gr. iv. 6tis. horis. Aug. 4. No alteration taking place under this treatment, he was put upon the carb. of iron, which he took in doses of ʒ ij, increased to ʒ iij, 6tis. horis, and a moxa was applied to the loins. 18. The stiffness in his knees and ankles has increased since last report; in other respects much the same. He was ordered vin. colchici ʒ ss ter in die, which was continued for some time without improvement. Sept. 10. He has now symptoms which leave no doubt that his ailments are to be referred to something more than rheumatism; he feels numbness in his lower extremities, which often causes him to trip whilst walking, and he has also occasional twitchings of the muscles. On examination of the spine there is not any irregularity perceptible, but he complains much of the pain, referred rather higher than the loins; a plan of treatment was therefore adopted more particularly directed to this situation; he was cupped repeatedly, and had blisters applied over the seat of pain, the only medicine which he took being aperients. Notwithstanding a very active application of these means, he became much worse; the numbness increased to total insensibility; the spasms of the muscles became much more frequent and severe; he lost all muscular power of the lower extremities; his urine became retained, and he passed his fæcis involuntarily; the loss of feeling involved the coverings of the lower part of the abdomen, as well as the lower limbs. He was now confined entirely to his bed, being unable to make the least voluntary use of his muscles. He continued during the following three weeks without any amendment; he was quite bed-ridden, and all the symptoms unalleviated, when about the 11th of October, he was attacked with acute peritonitis, which speedily terminated in death. *Autopsy.*—On examination of the spine, a considerable quantity of curdy scrofulous matter was found deposited beneath the anterior spinal ligament of the three lowermost dorsal vertebræ. The arches and spinous processes being removed, it was found that the vertebral canal was much encroached upon by deposit of the same kind beneath the posterior ligament. The extent of the disease in this situation was the same as in front, and occupied the same vertebræ. The quantity of matter formed was sufficient to press on the spinal chord, and thus induce the paralysis of the parts below."

This case shows us how necessary it is for us to be on our guard. Two months elapsed before the nature of the disease was suspected. As I have already observed, it would be altogether out of my power to give you, within the limits of a lecture, an account of the hundredth part of the forms that spinal irritation will assume. My object in this lecture is rather to point out to you the existence of such a disease, to warn you of its varied and deceptive symptoms, and of its power of simulating almost every other disease. Aware of its nature, you may give to your patient, in a few days, that relief which you might otherwise vainly attempt for months to confer. For an intimate acquaintance with this Protean affection, you must depend on your own observation and industry rather than trust to my inefficient efforts.

London Lancet.

Sur les perforations intestinal considerées sous le rapport de l'anatomie pathologique; par M. Corbin, D. M. P. Chef de Cliniqué à l'hospital de la Charité.

Essay upon the perforations of the intestinal Canal, considered in connexion with pathological anatomy, by M. Corbin, &c. &c.

Many recent works have been written upon the subject of intestinal perforations. M. Louis has published in this journal an essay in which he has endeavored to throw some light on its diagnosis. I have believed myself able to give some new views with respect both to its pathology and the various causes to which it may be attributed. My views and conclusions are drawn from facts, from which I have selected a number, as examples to illustrate what I am about to say. They differ much the one from the other, and the perforation of the intestine is the only thing they possess in common. I shall here treat only of those perforations which are produced spontaneously, and not of those caused by mechanical or other means.

Obs. 1st.—*Phthisis; Subacute Peritonitis,* death*; Tubercles in the lungs. Thinning and triple perforation of the intestine;*

Serous Effusion and false membranes found in the peritoneum; Old fractures and false articulations of the acromion and coracoid processes. Josephine Martinot, aged 54, was admitted into La Charité, April 18th, 1829. For several years she had been afflicted with a cough, and for several months a diarrhœa had been present, which had weakened her very much. For four months, she had been principally confined to her bed; these were all the circumstances which could be gathered from her. At the time of her admission, she was reduced to the last stage of exhaustion; her mind was confused, and she could scarcely give any account of her feelings. We gathered from her, however, that she had constant pain in the abdomen, which became more violent as evening approached; the abdomen was swollen, hard, and very tender on pressure, particularly in the right hypochondrium; the pulse was scarcely perceptible, but very frequent; and her countenance was distressed and distorted. Sinapisms were applied to the feet; the abdomen was covered with a large cataplasm, and an emolient enema was ordered. On the following day, the cataplasms were continued, two blisters were applied to the legs, and a cordial draught administered. From the first, her situation was considered as hopeless, and yet exhausted as she was, she lived till the 23d, five days from the time of her admission. During this time no great change was perceptible; she had nausea with frequent inclination to vomit, but without being able to effect it. Upon examination of the body, a great number of crude tubercles were found in the superior portion of each lung, only one of which was in a state of suppuration. The heart, larynx, and bronchial tubes were in a state of integrity. The great omentum descended to the pubes and covered the whole intestinal mass. There was no lesion in that part of it which was in contact with the abdominal parietes, but posteriorly, a great quantity of sero-perulent matter, and false membranes adhered to it. The internal surfaces of the intestines were agglutinated together, and presented as well as the omentum, all the signs of an acute peritonitis.

On examining the intestines exteriorly, a dark violet colored mark was seen, which occupied the whole circle of a convolution, and from the portion of it which was connected with the mesentery, a liquid fœcal matter was emitted, both anteriorly and posteriorly. This eschar was in the jejunum, at a distance of two and a half feet from the pylorus, above which the intestine was much distended. A similar eschar was situated in the convex face of the ilium, a few inches from the cœcum. It was round, and about the size of a twenty sous piece, with an appearance of fœcal matter issuing from it, by small orifices.

At the first eschar, a strangulation of the intestine was found in the interior, formed by a ring or species of valve, leaving an opening of not more than two or three lines in diameter. This valve was formed of dense fibro-cellular tissue, coated with a thin mucous membrane. Above and below, the whole circumference of the intestine was in a state of ulceration, but the valve itself was but slightly eroded. Three perforations were found in the ulcerated tract, one above, and two below the valve. They were of an oval shape, not more than a line in their great diameter, and communicated with small fistulæ which coursed amongst the folds of the mesentery, and opened into the peritoneum. It is probable that the other eschar would have presented the same appearances, but it was too much torn in separating the intestines to be properly examined, except so far as to discover on the interior, a large ulceration, with a dark and unequal base.

In the ulceration situated above the contraction of the intestine, a small collection of yellow matter was found, of a tuberculated appearance, and the size of a cherry stone. A small quantity of the same matter was found near the ulceration, corresponding to the second eschar. In the neighborhood of the perforations, the mesentery was thickened, of almost a scirrhus density, and contained some small tubercles. The intestine situated above the strangulation was distended to near double its natural size.

The digestive apparatus offered no other lesion worthy of notice. The mesenteric glands were slightly tumefied, but contained no tubercles. The other internal organs were sound. The acromion and coracoid processes of the left scapula had been fractured, the former at the base of the spine, the latter near the cervical edge. False articulations existed at these points, provided with complete articular capsules, cartilages, and synovial membranes.

Obs. 2d.—*Symptoms of chronic enteritis; alternate diarrhœa and constipation; acute peritonitis; death; false membranes with effusion of a turbid liquid into the abdomen; scirrhus thickening of the intestine; perforation.* A man aged 44, of a weak constitution entered *la Charité*, July 6th, 1830. He had been unwell for two years, during which time he had been afflicted with pain in the abdomen and diarrhœa. He had been getting worse for the last six months, had lost his strength and appetite, and was tormented by frequent colics; his bowels were alternately constipated and relaxed; sometimes he would have seven or eight stools in a day, and again two, three, four, or more days would pass without any evacuation. The same thing occurred during his residence at the hospital, but that which afflicted him the most, particularly in the evening, was a feeling of distention in the abdomen, which came on slowly. The abdomen became hard and sensible upon pressure. At the end of a few hours, he was generally relieved by a discharge of gas *per anum*. This accumulation of gas in the abdomen generally coincided with the periods of constipation. The diarrhœa then came on and was followed by a remission, in which there was neither fever nor any thing that announced the presence of an acute disease. Mucilaginous drinks, emollient cataplasms upon the abdomen, together with emollient lavements, were the only remedial measures thought necessary. He was also kept on low diet. As he found himself growing daily worse, he desired his dismissal from the hospital, which was granted. He returned in a few days, much weakened by his short absence. The emollients were again tried. He was restricted to liquid food with a small quantity of bread. He suffered from the same alternations of diarrhœa and constipation, and the same distention and pain in the abdomen. He referred these pains to the abdominal parietes, although they undoubtedly were much deeper seated.

There was no remarkable change until 4th September, on the afternoon of which day, the pain in the abdomen became very violent, and he vomited the food he had taken, together with some bile. By the following morning, a great alteration had taken place. He became of a yellow earthy color, with an abdomen tense and very sensible on pressure. These symptoms were attributed to a perforation of the intestine. The great exhaustion of his strength forbade the employment of energetic measures. Twelve leeches were applied upon the lower belly, which was covered with an emollient cataplasm, and the strictest quietude was enjoined. He became rapidly worse, till the 6th at noon, when he died.

Upon examination, the following facts were disclosed. In the thorax at the superior part of each lung, several indurations were seen, containing tubercles, and small sinuses. Their inferior portions were in a sound state. The heart was in a state of integrity.

Before opening the abdomen, several punctures were made in it without the emission of any gas. The peritoneum contained a brownish fetid effusion which was not considered as fœcal. There were five or six spoons full of this liquid in the upper pelvis, and nearly a wine-glass full in the lower one. The whole surface of the peritoneum was much inflamed, and false membranes were formed upon several of the intestinal convolutions, and folds of the mesentery. The excessive distension of the intestines filled us with the greatest astonishment. The inferior third of the ileon equalled in size the large intestine in its normal state. The last three inches of this tube, together with the ascending and transverse portions of the colon were still more enlarged. Near the biliary duct, the intestine suddenly became contracted and strangulated, and for the space of an inch and a half, was much indurated. The contiguous portions of the omentum and mesocolon were drawn up towards this point, and much contracted. The extremity of the ileon and the ascending colon were studded with sanguineous ecchymoses of various dimensions. An olivary perforation was found in the right external face of the cœcum immediately below the valve. It was about two lines in its longest, and one and a half in its shortest diameter. When this perforation was uncovered a great quantity of gas escaped, and the neighboring portion of intestine was found much weakened. A more minute dissection disclosed the following appearances. The strictured portion of the intestine consisted of a compact mass, in the centre of which was a perforation so small that the little finger could scarcely penetrate it. It was four or five lines thick, and its internal surface was uneven, but without ulcerations. By cutting it in different places, it was found to consist of a bluish white tissue, very dense, friable, not altogether homogenous, but composed of small lobules, separated from each other by cellular tissue. There were several cysts upon its exterior which contained a colorless and transparent colloid matter; above this place the colon was thickened and scirrhus, but below it preserved its natural appearance. The digestive tube being opened from one end to the other, nothing could be observed but some trifling lesions in the neighborhood of the valve, together with some black spots in the duodenum. The glands of Peyer were a little engorged, and some of them slightly eroded. The mucous membrane was partially inflamed. The ulcerations increased in number and depth as we approached the valve, which, in consequence of the distention of the intestine, had become detached from its inner surface, and formed an arch under which the ileon communicated with the large intestine by an opening of more than one inch. The end of the ileon was distended to the size of the cœcum, and the passage from one to the other could not be distinguished. Besides the perforation spoken of above, there were several others of different sizes, which did not communicate with the peritoneum. They were seated in the posterior face of the cœcum, and entered into the cellular tissue of the iliac fossæ. This tissue was enfiltrated with fœcal matter which so closely combined with it, that it could only be separated by tearing them apart. No trace of suppuration was found.

Obs. 3d.—*Cachexia; tumor in the left side; death; cancer of the intestines, of the mesenteric ganglions, of the liver, of the loins; perforation of the intestine; peritonitis.* Jean Pénel, aged 78 years was brought to La Charité, April 16th, 1829. His countenance was of a yellow earthy appearance, and his strength completely exhausted. He had in his right side, a large inguinal hernia which had never given him any trouble. In the left side, a little above the iliac region, there was a solid tumor about the size of the fist; it had been gradually coming on for three years; lancinating pains had occasionally been felt in it, which had lately increased in requency, and was brought on by the least exercise. The abdomen was a little tumefied, and he had some inclination to vomit. The tongue was dry, and he had great thirst. The oxymelle of orange, lavements, and emolient cataplasms were prescribed. He died at the end of three days.

On examination after death, the peritoneum was found to contain a large quantity of yellow serum, and a great number of the intestinal convolutions were agglutinated together. Colored injection was thrown into all parts of them. The tumor above spoken of, was found in the left side; it was of the size of a duck's egg, of a bluish tint, possessed a little elasticity, and appeared to be incorporated with the intestine. In that part of its surface which corresponded with the vertebral column, there was a yellow spot, in the centre of which there was a perforation with ragged edges, of a circular form, and about two lines in diameter. Upon making an incision into it, we discovered that it was nothing but the intestine itself which had become scirrhous and enlarged. The seat of this alteration was in the commencement of the ileon which had acquired a thickness of three or four lines. In its interior were found two different kinds of spongy substances, resembling those commonly found in the pylorus. There was a passage in the centre, equal in size to the natural calibre of the intestine. The mucous membrane lining this passage, was free from ulcerations, and was deficient but in one place, where the intestine was in a putrid state. A probe introduced here, arrived at the perforation spoken of above. For seven or eight inches, both above and below this tumor, the cellular and muscular coats of the intestine were in a state of hypertrophy and scirrhus, although much less thickened. In this place, also, there existed a great number of ulcerations.

The tumor was joined with a portion of mesentery, which was likewise in a cancerous state. A great number of the ganglions were transformed into a medullary substance, of a pale red color, in a state of incipient ramolissement. A mass of medullary matter in a softened state, was found in the small lobe of the liver. Four or five collections of this substance, about the size of a plumb, were detected in each kidney. No other lesions worthy of notice were observed.

Obs. 4th.—*Cough, catharsis, violent peritonitis; death in thirty-six or forty hours; tubercles and vomicæ in the lungs; effusion of a turbid liquid, with flocculi in the peritoneum; intestinal ulcerations, mixed with tubercles; perforation of the coecal appendix.* Peter Charbot, aged 36 years, was admitted into La Charité, June 5th, 1829. He was thin and pale, with sunken cheeks and prominent cheek-bones. He had cough and diarrhœa, with profuse night sweats. He attributed his disease to a violent cold he had taken several months previously. He expectorated a great quantity of a greenish opaque matter. Neither tubercles nor vomicæ were indicated by percussion or auscultation. His abdomen was much tumefied, and it was thought some fluctuation could be perceived. Pectoral drinks were prescribed. No material change took place till the morning of the 13th; at that time his face became distorted, and his abdomen distended and very sensible on pressure. His pulse was hard and strong; skin hot and moist; urine red and scanty. All these alarming symptoms had developed themselves suddenly during the preceding night. The abdomen was rubbed with oil of chamomile, and blisters were applied to each leg. The patient died on the 14th, at noon, and the *post mortem* examination was made twenty hours after, when the following appearances were noted.—The cellular tissue was slightly infiltrated; the left lung was in a healthy state, with the exception of a few semitransparent granulations scattered here and there. The centre of its superior lobe was converted into an indurated mass, containing tubercles and vomicæ. In the larynx there were some appearances of granulations, together with superficial ulceration of the mucous membrane of the anterior part of the epiglottis. The trachea was ulcerated in its whole extent. There was hypertrophy of the left side of the heart, without dilation or stricture. The peritoneum was not injected, but there was in it, an effusion of a greenish, turbid, floculent, inodorous liquid. The small pelvis was filled with it, and there was half a glass full in each renal region. In consequence of some ancient adhesions, the coecal appendix was turned upon itself from one end to the other, and at the place of its curvature, there was an olivary perforation, with smooth edges, about two lines in its great and one in its small diameter. No uncommon appearances were seen either in the stomach or duodenum. About two feet below the pylours, large ulcerations commenced; their direction was transverse, and some of them comprehended the whole circumference of the intestine. Their bases were uneven and studded, with small tubercles, and filaments of yellow, gangrenous, cellular tissue. Some of them had penetrated all the intestinal coats with the exception of the serous one. They continued without interruptian as far as the anus; they were smaller and most numerous just above the ileo-coecal valve. The intestine was generally in a thickened state. The coecal appendix, which was the seat of the perforation, was partly filled with fragments of a red substance, resembling ganglions, which could be forced out on pressure. Near this perforation, on the exterior of the intestine, was a raised mass about the size of half a plum, injected on its surface, and of a yellow color, which appeared to be cellular tissue in a tuberculated state. The whole interior surface of the appendix was in a state of ulceration. The bases of the ulcers were uneven, injected in some places, and tuberculated.

Obs. 5th.—*Typhus fever complicated with pneumonia; death; engorgement of the lungs; intestinal ulcerations; effusion of fæcal matter in the abdomen; peritonitis; perforation of the intestine.* Peter Coutain, aged 24 years, of a sanguine temperament and strong constitution, entered La Charité, February 20th, 1829. He had been unwell for five days, during which time he had coughed and complained of general weakness and distress. On examining the chest, nothing could be perceived but the *rale muqueux*, combined with a little of the *rale sous crepitant*. No change took place in him for ten days, neither were any active remedies resorted to. On the 2d of March, he complained of having coughed all the preceding night; his sputa were streaked with blood, pulse strong and frequent, respiration loud and difficult. Pneumonia was suspected, and he was largely bled, but with little good effect. The same symptoms continuing, he was bled four times more during the six days preceding the 8th, when a blister was applied to each leg.

On the 9th he was much worse; his tongue was dry; his skin hot; and he suffered from profuse perspiration, with diarrhœa: six grains of ipecacuanha were administered. The patient was very restless during the remainder of the day. The perspiration continued on the 10th, and his strength was diminishing; a blister was applied over the sternum: on the 12th he was quite insensible. On the 13th, he was a little revived. Frictions of the oil of chamomile were applied to the abdomen. On the 14th, he again became insensible, and was bathed in constant perspiration; on that day, for the first time, a considerable swelling of the abdomen was observed. On the morning of the 15th, his pulse had become almost insensible; it was irregular and very frequent. Sinapisms were applied to the legs. He died on the following night. The examination was made thirty-six hours afterwards:—In the cranium the vessels of the arachnoid membrane and pia mater were engorged with blood; the brain was of a dark red color, and very firm, with sanguineous serosity at its base. There was a great quantity of a dark red serum effused into the thoracic cavities. The lungs were completely engorged, and their structure partly broken down; there was some crepitus in their lower portions. The cavities of the heart were very large, and appeared on both sides to be in a state of passive dilatation; its tissue was much softened. The peritoneum contained a large quantity of a turbid, dark fœtid liquor, resembling liquid fæces. The intestinal convolutions were much agglutinated together. The intestines were much distended, and their surfaces injected. An oliviary perforation, one line and a half in its greatest diameter, was seen near the coecum. There was no alteration in the small intestines, with the exception of a number of black spots, save for two feet above the coecum. From this place to the ileo-coecal valve, there were ten or twelve ulcerations with red bases, turgid, and irregularly circular; the largest being about the size of a thirty sous piece. The perforation was in the one nearest the end. The mucous coat was destroyed, and the serous one denuded to twice the size of the perforation. The only lesions in the coecum were three lenticular ulceraations, and hypertrophied follicles. The other organs were healthy.

Before considering particularly the intestinal perforation, I will make some observations upon the other lesions noticed above. The double fracture of the scapula will claim some attention. It is rare to see factitious articulations so well organized as they were in this case. The ligaments were loose and simply cellular, and permitted a free motion of the bones, the one upon the other. From this circumstance, the luxation of the humerous was as improbable as it would have been in the normal state. The movements of the arm were uncertain, and it is probable the patient had not the full use of it for such purposes as sealing a letter or going on his four limbs. No one could give any account of the manner in which the fracture had occurred, or of the way in which the deceased had used the limb.

The cancerous affections developed in the liver, the intestines, the mesenteric ganglions, and the kidneys, were also worthy of attention. It is a law in pathology, that when any accidental production is developed in the animal economy, those which are afterwards formed shall be of the same nature. I am in possession of four cases in which medullary matter was found at the same time in the lungs, and in the liver.

For my ideas upon the contraction of the intestine in the two first cadavers, I must refer to another work, (*Voy. Archives de Novembre,* 1829.) I will here only remark a peculiarity which did not exist in the other cases, viz.: The contortions of the epiploon, mesocolon, and all the parts in the neighborhood of the strangulation; a fact which confirmed my idea, that the contraction of the intestine is frequently the consequence of ulceration, loss of substance, and an effort at cicatrization. I have also said in the same work, that the contraction of the intestine frequently causes the perforation. It can easily be conceived, how the matter collected above the contraction should distend the intestine, and be a cause of permanent irritation, ulceration, and, finally, perforation. In the first case, of the three perforations which existed, two of them were below the contraction. This can be explained from the fact that the fœcal matter was infiltrated to a certain extent, and produced a perforation more or less distant from the place of departure. I do not pretend that intestinal perforations may not be formed in other ways than this;—the facts which I have stated are brought forward rather as examples than as proofs. The other causes which I shall point out, are more immediate and direct. In the third observation, there is an example of perforation caused by a cancerous affection. Nothing is more common than this. The medullary description of the disease most commonly produces this lesion, from the circumstance of its tending first to ramollissement, and then to ulceration. In the case mentioned in the fourth observation, I would notice the tubercles which existed in the intestine as the cause of its perforation. This idea may appear hazardous, until we recollect the mass of tuberculated cellular tissue found near the opening, and the collection of minute tubercles strewn over the interior ulceration, corresponding to the perforation. I have in phthisis found, at least thirty times, the intestine perforated. This case was selected because the perforation communicated with the peritoneum, while in the others they extended to, and ended in the cellular tissue of the iliac fossæ, of the meso-rectum, of the mesocolon, or other portions of the extra peritoneal tissue. To what can we attribute the perforations so frequent in phthisis, if it be not to the tubercles in the intestines? The ulcerations are without hesitation attributed to them, because they are found at their bases; but in the perforations it is evident this proof must be destroyed, and in default of it we have only the fact of tubercles, both crude and in a state of ramollissement, being found under the mucous membrane and the muscular and serous coats of the intestine.

The fifth observation gives an example of a very frequent occurrence, viz.: The perforation of the intestine in consequence of some acute malady, such as typhus fever. In this case it depends upon the progress of the gangrenous inflammation, which extended to the peritoneum, instead of being bounded, as usual, by the more superficial coats of the intestines. This lesion takes place at the time when the eschars are detached in the second stage of the disease, and sometimes at the moment when the patient appears convalescent.

Such are my views of the principal causes of the spontaneous perforations of the intestines, viz.: the contraction which predisposes to this lesion, if it does not produce it; cancer and tubercles amongst the chronic diseases, typhus amongst the acute. Are there no others? Is ramollissement one of them? I do not know any authenticated facts to warrant me in asserting the affirmative. I have said I should not here treat of the symptoms which succeed the perforations; I will however remark, that they were very obscure in Case No. 5, and yet more so in No. 6, which had been but little observed. It is, I think, generally so in certain habits of body, or with patients exhausted by age or by disease. In such cases, the perforation of the peritoneum would only cause a latent peritonitis. We have seen in the first case, the communication with the peritoneum was at some distance from the intestinal perforation, and that there was between them a fistulous canal, between the two folds of the mesentery, so that the perforation could have existed for some time before it reached the peritoneum, and caused it to inflame. There is no peritonitis when the perforation communicates with the other parts of the extra peritoneal cellular tissue, as in the second case. It is seldom that an infiltration of fœcal matter takes place as in this case, and it is a rare thing for so dangerous an event to occur in phthisis. The consequences of this lesion differ according to its situation. In Case No. 4, the perforation was seated in the coecal appendix; I have seen the same thing twice, and M. Bodey, my colleague, has seen it three times. From various facts which have come to our knowledge, we have published our opinion, that the coecal appendix is the most common seat of these perforations. Are we too hasty in the conclusions we have drawn? I think not. I believe it to be *à priori* the place most exposed to this kind of lesion. It is in man a sort of passive receptacle without much muscular contractibility to expel its contents, besides which it is often rendered immovable by adhesions, as in the case we have given. Fœcal matter is often found in it, together with fragments of bone, coagulated blood, pus, and organic remains of ulcerations. These things distend the appendix until irritation supervenes, followed by ulceration, and, if our conclusions are correct, by perforation.

De l'oblitération des veines comme cause d'œdème ou d'hydropisie partielle, specialement dans les membres inférieurs ; par M. Corbin, D. M. P. chef de clinique à l'Hospital de la Charité.

Œdema, or partial dropsy, especially of the lower extremities, caused by the obliteration of the veins; by M. Corbin, D. M. P. &c. &c.

Previously to the year 1823, many authors, and. amongst the rest, Morgagni, Camper, Hogdson, Travers, Béclard, Raikem, and Bodson, had attributed certain local dropsies to the obstruction of the venous trunks. All that had been done on this subject previously to that time, may be seen in the valuable article of M. Rayer, (*Dict. en 21 vols. Hydropisic*) and in the two memoirs of M. Bouillaud, published in the Archives, in 1823 and 1824. Until this time, but little had been ascertained upon this point, and if this theory be just, the glory of having established it belongs to M. Bouillaud.

There appear to be but few objections to his work. He rests entirely on facts, and shows successively the obstruction of the abdominal vena cava, giving rise to œdema of both legs; that of one iliac or femoral vein to the infiltration of one only; that of the vena porta to ascites; that of the superior vena cava, or of the large trunks which go off to the right or the left, to the infiltration of all the face and upper extremities, or only of one side, according to the situation of the obstruction.

In this theory, M. Bouillaud merely wished to include passive dropsies, to the exclusion of the hydro phlegmasiæ. Meckel, Travers, Chaussier, David Davis, and after them, M. Velpeau, have, however, attributed the acute œdema of lying-in women to the same cause. Recent attempts have been made by writers to develope and confirm certain parts of the theory of M. Bouillaud. With respect to the vena porta, M. Reynaud has proved, that its obstruction produces ascites, and that it also gives rise to a dilatation of the superficial veins of the abdomen, which affords us an invaluable diagnostic. M. Louis has published in the *Journal Hebdomadaire*, a very curious fact with respect to the inferior vena cava. On the other hand, authors have not been wanting to oppose this system: Hodgson, Travers, and Béclard, though favorable to the ideas of Bouillaud, have reported facts against it; M. M. Rayer and Bricheteau have tied the principal venous trunks without producing effusion; and Bichat asserts, that the obstruction of the veins, even of the largest trunks, may occur without the production of a general dropsy.

In discussing the general question, it is not my intention to take any part in this dispute. I shall follow the example of M. Reynaud, in confining myself to the illustration of one single point; which is the case of the infiltration of only one of the lower extremities, or where one is much more so than the other. Morgagni, Travers, Hodgson, and M. Bodson, have cited four cases of this kind, and M. Bouillaud has given us four similar ones in his first memoir. In all these cases, the veins of the affected limb have been obstructed.

Obs. 1st.—Joseph Lalègue, aged 31 years, was admitted into La Charité, April 20th, 1829, in an advanced state of tubercular consumption. His case was principally interesting on account of the œdematous state of his left leg, which was one-third or fourth larger than the other. It was much indurated, very painful, and could not be moved without great difficulty; there was no infiltration in any other part; and the saphena with its branches appeared healthy. The patient died on 1st of May, and was examined the following day. The saphena and its divisions were open and healthy, and differed in no way from those of the opposite limb. The external iliac vein, for an inch after its passage under the crural arch, together with the femoral vein and all its branches, from the arch to the heel, were converted into cords. Their interior was filled in some places with clots of a pale red color, formed principally of blood recently coagulated; in others, with a grumous fluid of the color of lees of wine. The parieties of these veins were opaque, of a yellowish white color, firm and elastic, resembling in density and consistence the arteries lying at their sides. Nothing of the kind was observed in the opposite limb.

Obs. 2d.—A young man named Milot, aged 20 years, entered La Charité, 10th December, 1828, in such a state of exhaustion, that he died on the 18th of the following month. His disease was pulmonary consumption. The left leg was infiltrated, as in the preceding case. It had come on suddenly, on the 3d or 4th of January, and made very quick progress. The whole limb was painful, but without redness of the skin. An examination of the body disclosed the left external iliac vein, for two inches from the arch, filled with a thick fluid, in which could be seen a mixture of blood and pus. The common iliac vein as well as the vena cava was free from disease. The femoral vein, and all its branches, were filled with a firm coagulum, the external part of which was paler and firmer than its centre, so that a section of the vein disclosed two circles; one formed by its parieties, the other by the red exterior of the coagulum; and in the centre black and concrete blood was seen. In the iliac, a fine layer of brown fibrine was so disposed as to separate the sides from the pultaceous matter above spoken of. It could be detached and drawn out in filaments as long as those found in the interior of an aneurism. The parieties of this vein, as well as those of the femoral vein and its branches, were sensibly thickened and quite opaque. The vessels of the other limb were in a state of integrity. Thus far we have found infiltration of but one side, and, upon examination, the vessels of that side were filled with coagulated blood. We shall now give some facts differing a little from the foregoing.

Obs. 3d.—A young English divine, aged 25 years, was received into the *clinique* of M. Chomel, with an inflammation of the pleura of the right side, of long standing. Some time afterwards, an effusion took place into the other pleura. From the first, there was a slight infiltration of the lower extremities, which was much augmented towards the close of the disease, particularly in the left limb. No lesion could be discovered to account for this symptom. Upon an examination after death, the crural vein from one end to the other, together with its most minute ramifications, including the saphena and its branches, was found filled with recent sanguineous concretions, soft and of a rich color. The other limb presented the usual appearance.

Obs. 4th.—Levasseur, aged 46 years, was admitted into La Charité, January 30th, 1829. He died 9th February, from an abcess of the liver, complicated with peritonitis and slight pneumonia. A few days before his death, both his lower extremities became much swollen, but the left more so than the right. Upon examination of the body, no lesion of the veins of the right limb could be discovered. In the left, the termination of the external iliac, the femoral, with the saphena, and all their ramifications, were converted into thick black cords; some idea of the size of which may be formed from the saphena, which was as large as the little finger. All these veins were filled with a hard fibrinous coagulum; their parieties were thickened, and of a whitish color; nevertheless, the valves retained their thinness and transparency. In these two last cases, the limbs in which the veins were in a healthy state, were slightly infiltrated.

Obs. 5th.—Victor Damoisel, aged 45, entered La Charité, June seventeenth, 1829, in the last stage of phthisis. His right leg was much infiltrated; his left one so slightly that it could not be discovered with the eye. He died on the 26th of the same month, and the following appearances were presented on examination. The termination of the inferior vena cava from within an inch of its befurcation, contained some clots of coagulated blood, of a violet tint, separated from each other, and of an oval or round shape. The largest were the size of a pea, with an unequal surface. The primitive and external iliac of the left side contained clots still more small and numerous; but yet not sufficiently accumulated as to arrest the circulation completely. Upon the right side, the primitive and external iliac, together with all the superficial and deep-seated veins of the limb, from the crural arch to the foot, were filled and distended with coagulated blood, but there was not so firm and continued a clot in the primary as in the secondary branches. In the large trunks, particularly in the origin of the crural vein, and in the iliac, there was nothing but particles of fibrine, more or less voluminous, mixed with a red sanies, partly floating and partly adhering to their parieties, which were thick, firm, opaque, and whitish. Upon the right side, nothing of this kind was found; or, rather, no difference could be seen between those portions of the veins which were free, and those which contained the coagulated blood. We have here a case, in which the infiltration on each side was in exact proportion to the lesion of the vessels.

Obs. 6th.—Mademoiselle Lecomte was admitted into La Charité, 4th of March, in the last stage of consumption. The only remarkable thing in her case was, great œdema of the right leg, without any redness, pain, or lesion in the superficial vessels, or in the iliac fossa, which could account for it. Enlightened by the preceding fact, I predicted to my colleagues, that we should find the large venous trunks obstructed by clots of fibrine. The œdema had existed but eight days, so that we could not suppose there was any other lesion. The patient died on the fourth day after admission. It was not until the moment of opening the body that I discovered a slight infiltration of the right limb, when I foretold we should find some coagula on that side, but of a recent formation and in small quantities. My prognosis was completely verified. The deep-seated veins of the right side, including the primitive and external iliacs, were filled with a coagulum, partly firm, discolored, black and recently formed. This coagulum was traced from the vena cava to the heel; without any interruption; the vessels were sensibly thickened. On the left side there were some sanguinious concretions in the iliac and femoral veins; but they were recent, and in too small quantities to obstruct the entire circulation. In other cases of the same kind, I have never been able to ascertain the exact point of the stoppage of the circulation. In this instance I believe I have found it in the mesenteric and lumbar ganglions, which were tuberculated and much increased in volume. These had attained the size of a nut, and in some places, by an agglutination of several of them together, formed masses as large as a small apple. One of these masses surrounded the inferior vena cava, where it enters the liver, and many others were placed anteriorly, so as to compress it when the patient lay on her back.

Obs. 7th.—Marie Bissan, aged 66 years, died in La Charité, 13th June, 1829, of hypertrophy of the left side of the heart, together with chronic peritonitis. The abdominal viscera were in a state of complete agglutination from the effects of the inflammation. The omentum and mesentery were thickened, and here and there formed cavities which were filled with pus of sero-purulent matter, and crude tubercles. The whole formed a mass, which it was impossible to examine without cutting through its whole length. The abdominal aorta, the vena cava, and the iliacs, were situated behind this mass. The size of the aorta was much diminished, and at the place of its bifurcation was not larger than the trunk of the brachiocephalic in a common sized woman. The vena cava was also very small, but its cavity was free. The two iliacs were filled in their whole extent, with a rough fibrinous matter; on the right side the matter was soft, but on the other, it formed a continued mass, which extended itself below the crural arch. During the life time of this woman, the lower extremities had been much infiltrated, but it had not been noticed whether they were equally so.

Conclusions.—If, to the facts which I have stated, we add those reported by Morgagni, Hodgson, Travers, M. Bodson, and M. Bouillaud, we must conclude with the last named physician, that œdema of the lower extremities is caused by the obstruction of the great venous trunks. The same reasoning will apply where one limb is more infiltrated than the other, or where the œdema takes place sooner in one than in the other; and here I am borne out by the testimony of M. Louis, who has always found the fibrinous concretions in much larger quantities in the vessels of the affected member. It was on this account, that in the year 1829, I inserted in my inaugural thesis the following proposition: "When only one limb is infiltrated, there is always in it, a material obstruction to the venous circulation." The obstruction of the venous circulation may be caused in several different ways. A tumor, or the gravid uterus may press upon the vessel, and produce the same effect as concretions formed in it; but these last are the most common causes. Notwithstanding these concretions must be considered as the cause of the œdema, yet they are but a secondary affection; and pre-suppose some obstacle which arrests or retards the course of the blood. What conclusions then are we to draw from those cases in which no compression has been made upon the veins? Must we attribute them to the weakness of the system, to atony, to the sluggishness of the circulation, and to coagulation? It is certain that this state of things occurs only in weak and debilitated subjects, and that in others, the agents in the circulation, whatever they may be, triumph over every obstacle. I am, however, far from adopting as true the whole of this explanation. In the kind of cases of which we have spoken, the parieties of the veins are always in a state of hypertrophy, thickened, firm, and opaque, and very much resembling arteries. Sometimes the surrounding cellular tissue participates in the induration, as may be seen in observation second. This must arise from an inflammation or chronic irritation. May not the coagulation of the blood be caused by a sub-acute phlebitis? We know this to be a common sequel of phlegmasia, and the great pain experienced in cases first and second, would seem to favor this opinion. I only give this as a conjecture, as I know many objections to it may be drawn from my own observations. The first point of obstruction is always in the large vessels, particularly in the iliac or the origin of the femoral vein, from whence it extends itself to their most minute ramifications. The seven cases which I have given above, were selected indiscriminately from twenty, all of which fully bear me out in the opinions I have formed.

Objections to what I have stated may be drawn from the fact, that in cases third and fourth, the obstruction of the veins existed but in one limb, notwithstanding both were infiltrated. The infiltration in one of them was evidently secondary, and preceded death but a very short time. It is probable the whole circulation had become very languid, and that small coagula had been formed and entered by the vena cava into the general current of blood. How shall we explain the recoveries which have taken place after this infiltration? M. Reynaud agrees with M. Bouillaud in admitting an increased activity in the collateral circulation, and an absorption of the clot in the obstructed vessels. I cannot subscribe to this opinion, although I have not sufficient matter to refute it. The reason of this is, that the fibrinous clots are formed in the first place in the origin of the large vessels, particularly in that of the femoral vein, consequently above the place where the saphena empties itself, and between it and the origin of the abdominal subcutaneous veins. How then are we to account for this collateral circulation? Is it by the chain of vessels placed behind the thigh, which arise from the profunda and surround the sciatic notch? It cannot be, for these are the vessels which are the most constantly obstructed, and I have found the saphena and its divisions in a state of integrity but in three cases.

I admit then a collateral circulation, but I deny that its activity is either increased or diminished. The small quantity of blood which passes into the limb, returns either by forming small canals in the coagula, or by forcing a passage between them and the parieties of the vessels, in the manner which has been described by M. M. Louis and Reynaud.—(*Voy. Journ. Hebd. Tom.* 2, *No.* 24.)

New Theory of the Human Voice; memoir crowned by the Medical Society of Emulation, by J. F. Malgaigne, de Charmes, Surgeon to the Military Hospital of Instruction of Val-de-Grace, and member of many learned societies.

1st. Few of the functions have been as much studied as that of the voice, and there are few with which we are not better acquainted. This apparently paradoxical assertion is nevertheless true. Compare the systems of Dodart, of Ferrien, of M. M. Cuvier, Dutrochet, Magendie, Sarast, Mayer; they oppose and tend to destroy one another. They each offer some remarkable facts, and correct views; but we cannot be satisfied with them as a whole. What is most remarkable, is, that there exists as much uncertainty with regard to the anatomical conformation of the larynx. Perhaps no two authors have given the same description of it.

I shall attempt to illustrate this subject. I have dissected the human larynx in individuals of both sexes and all ages, also the larynges of different animals. I have repeated such experiments as are already known, to which I have added many others, and the results of my researches, I now publish in this memoir.

It shall be divided into two parts. I shall describe the anatomical structure of the larynx, omitting all which is sufficiently known; the second part shall be devoted exclusively to the study of the voice.

FIRST PART.

Anatomy of the Larynx.

2d. *Of the larynx in general.* The larynx is an irregular tube situated on the anterior part of the neck, above the trachea and below the os hyoides. Externally, it has been compared to a truncated cone, but in anatomy, comparisons are rarely just. It is larger above than below; the lower part is a perfect ring; above, it slopes considerably backwards. Finally, it is surmounted by three appendices, viz. the epiglottis and the two great thyrodean cornua.

3d. The inferior orifice of the larynx is large and circular; the superior is narrower, and represents a triangle, the base of which is in front. Between these two orifices interiorly, are found two chinks. which extend from before backward.

The first, which I call the superior glottis, appears to be formed by two triangles united at their base.

The second, inferior glottis or glottis proper, is in men, from twelve to fifteen lines long, and in women, from eight to ten; it terminates in a point anteriorly, is narrowed in its middle, and is largest posteriorly.

The borders of the two glottides are separated by two cavities more or less considerable, which are called the ventricles of the larynx.

4th. Such is at first view, the human larynx; in the ox, it is larger below than above. It has neither the superior glottis nor ventricles. In the dog, the epiglottis is flattened and bent upon itself in such a manner as to give the superior orifice a very peculiar appearance. Internally, its two glottides and two ventricles make it approach the human larynx, from which by the disposition of its muscles and cartilages, it is still far distant.

In the cat, the differences are well marked; the superior orifice is quadrilateral; the superior glottis is eliptical; the inferior is with difficulty closed posteriorly; in place of two, there are four ventricles, two of which are between the glottides, and two above the superior glottis.

The larynx of the lion is analagous to that of the cat; its volume when compared with the bulk of the animal, is enormous; it is elevated anteriorly, and has two glottides and four ventricles, the inferior of which are shallow, and posteriorly are scarcely perceptible; the superior, on the contrary, are very large and deep.

5th. *Cartilages of the larynx.* The skeleton of the larynx is formed by the union of five principal cartilages, which are the cricoid, the thyroid, the epiglottis, and the two arytenoid. The cricoid is unworthy of notice. Far from constituting, as Bichat has attested, the most important piece in the larynx, it can be removed without destroying, apparently, any of the essential parts of this apparatus. The cricoid appears to me to be but the superior ring, of the trachea, and it is so frequently found united with the ring below it, that I consider this union as its most ordinary condition.

6th. The thyroid is essentially important, although Bichat has asserted that it scarcely concurs in the formation of the larynx. It has been very well described by anatomists. I am surprised, however, that they describe as constantly present, a salient line which they term the *external oblique line*, and that it extends from the superior to the inferior border of the cartilage. The human thyroid on its external surface, near the junction of the superior border with its great cornua, has a well marked tuberosity. Another tuberosity is seen on the middle of its inferior border. In the recent state, a tendinous cord is perceived, extending from one tuberosity to the other, into which three muscles, are inserted, viz. the constrictor pharyngeus inferior, the thyro-hyoid and the sterno-thyroid. This cord is in the *described* situation of the oblique line, which must be rare, as I have never seen it.

7th. I shall add also a few words to the classical descriptions of the arytenoid cartilages. The anterior angles of these cartilages are curved inwards a little, which forms in the middle of the glottis, that narrowing which I have pointed out. Near the truncated summit of the arytenoid is a little eminence (which has not been remarked until now) looking forward and outward, in which is inserted the superior oblique fibres of the arytenoid muscle. This eminence appears in man to be the analogue of a much more considerable process, situated on the arytenoid of the dog,

8th. Above the human arytenoid cartilage is found a very smal one, to which Santorini has given his name. It is thin, moveable, and curved backward, which inclination permits the alimentary bolus to glide smoothly over its surface. It is wanting, in the inferior animals, but the arytenoid in them is so disposed as to fulfil its office.

In the cat, the summit is thin and slightly elevated; in the dog, its structure is soft, and differs from that of the base of the cartilage; in the lion, it has a posterior inclination; finally, in the ox, the texture is throughout the same, it is thin and lubricated by a number of follicles, it has also a special ligament which keeps it inclined towards the pharynx.

9th. The epiglottis appears to be superadded to the thyroid, as the cartilages of Santorini are to the arytenoid.

In the human subject it is contiguous to, but in the dog it is a process of the thyroid. By making a vertical section, we perceive that it is composed of two substances, the posterior is cartilaginous, the anterior is composed of a number of yellowish follicles contained in a dense fibrous structure, some of which are prolonged into the cartilaginous tissue. I think it merits the name of epiglottidean gland.

10th. It is remarkable that these cartilages, viz. the cricoid and epiglottis, differ only in volume in the animals I have compared to man.

On the contrary, the thyroid and arytenoid, without which neither the ventricles nor glottis could exist, presents many peculiarities. The thyroid of the male differs from that of the female, in presenting a more considerable projection anteriorly, in a bifurcation which descends to the middle of the cartilage, and in the superior border being longer than the inferior. In females there is occasionally no projection anteriorly. I have seen in one subject the space between the lateral lamina united by a quadrilateral lamen: the inferior border equal or larger than the superior; and the bifurcation only occupying the superior third of the cartilage.

11th. In the dog, the bifurcation is inferior; it does not exist in the ox. The thyroid cartilages of this animal are narrower above than below; the inferior cornua are longer, and the anterior projection greater at the lower part of the larynx. It resembles the human larynx inverted.

In the cat, the two lateral lamina are rhomboidal, and the result of their union on the median line is a considerable projection at the upper part, which corresponds to an angular slope of the inferior border; we find also the oblique line to which is attached the extrinsic muscles of the larynx. Behind this, is a hole for the transmission of the vessels and the superior laryngeal nerves; these holes exist also in the lion, and M. Blandin has found them in the human subject, but they were filled with adipose matter.

These thyroid cartilages have at their inferior cornua, surfaces for articulation with the cricoid. In the ox, dog, and cat, are similar surfaces which connect the upper cornua to the os hyoides. In the human subject and in the lion, these articulations do not exist.

12th. It is interesting to observe the peculiar formation of the arytenoid cartilages in different races of animals. In the human subject each has three surfaces, viz.

An internal, which is very narrow, an external, and a posterior which is the largest.

In the inferior animals, the internal surface of the arytenoid is the largest, and the ligament which connects it to the cricoid, allows much less motion. The base of this cartilage is so obtuse in the cat, that it is almost confounded with the internal surface. In the lion it is entirely distinct.

The arytenoid of the dog is very complicated, it resembles a broad, based triangular pyramid, the summit of which is thin, and is considerably curved backward,—in the middle of the anterior border is a process nearly as large as the cartilage, to which it is connected by a very narrow pedicle. It resembles the anvil in the cavity of the tympanum. On its lower and anterior part, there is an eminence which projects and forms the superior wall of the ventricle of the larynx.

Posteriorly there is a thin and conical projection which is curved forward so as to be convex posteriorly, and concave anteriorly, and to which the arytenoid muscle is attached. Its analogue in the human subject, is that little eminence heretofore described.

It is essential to know this, to appreciate the worth of certain experiments on the larynx of the dog, in illustration of the physiology of the voice.

13th. *Ligaments of the larynx.* The thyroid is articulated with the cricoid, and the cricoid with the arytenoid cartilages. It is not the articulations which have excited so much discussion, the question is, whether the thyroyd is drawn towards the cricoid, or whether this last approaches the first. M. Ferrein asserted that the thyroid approached the cricoid, which opinion on his assertion, was generally adopted, until it was opposed by M. Magendie.

Experiments in which the sterno-hyoid muscles were divided leaving the exterior of the cartilages visible, have satisfied me that the cricoid approaches the thyroid. I have never seen this last descend.

14th. The next point is whether the crico-arytenoid articulation permits a lateral motion of the arytenoid on the cricoid, and whether, as a celebrated physiologist has asserted, antero-posterior motion is impossible, which assertion I do not believe, for the thyro-arytenoid muscle draws the arytenoid cartilage forward, whilst the crico-arytenoid pulls it backward. The synovial capsule is sufficiently lax to allow it, and the articular surfaces are so disposed as to favor this motion. The articular surface of the cricoid is greater, transversely, than that of the arytenoid; the articular surface is of greater extent from before, backwards. In the same manner the first is convex, and the other is concave. Finally, to be convinced, it is sufficient to move the arytenoid on its base, to perceive that the motion describes the arch of a circle from within, outwards, and the reverse.

15th. Four ligaments, two on each side, unite the thyroid to the arytenoid cartilages. The superior extend from the inner angle of the thyroid to the anterior border of the other cartilages. They are curvilinear with their concavities opposite each other, and are not parallel with the inferior ligaments, but approach each other more anteriorly than posteriorly.

Some authors assert that they are mere folds of the mucous tissue, others that they are the second prolongation of the anytenoid gland, both of which assertions are erroneous. They are evidently fibrous; they are longer and thicker than the inferior, but less dense. They circumscribe the superior glottis.

They are not found in the ox; in the dog, the aryteno-epiglottidean muscle supplies their deficiency. They are well marked in the cat, but thin, and formed by a fold of the mucous tissue. In the lion, they are well marked, but scarcely fibrous. In these two animals, they are inserted below the epiglottis, and are farther separated from the inferior, anteriorly than posteriorly, being the reverse of their situation in the human subject.

We can but conjecture their use. They contract the vocal tube above the ventricles in such a manner as to present some analogy with the structure of wind instruments. Are they not influential in producing grave and sonorous tones? The purring of a cat, may it not be caused by the vibration of these ligaments? By blowing through the trachea of a cat, we perceive them vibrate more than the chordæ vocales. In the lion, they are better disposed for vibrating.

16th. The inferior ligaments, called since the time of Ferrein, chordæ vocales, are seen below.

These are two fibrous cords, white, very dense, and very elastic, extending from the anterior angle of the arytenoid, to the internal angle of the thyroid. It is impossible to perceive these with M. Dutrochet as the simple apeneurotic replication which covers the thyro-arytenoid muscles; they are well developed in the ox, where there are no ventricles, and consequently no aponeurotic replication. In the dog and cat, they are very thick. Those of the lion, were in a state of relaxation, two inches and some lines in length, and by moving the cricoid on the thyroid, they measured three inches.

In the human subject, they occupy a little more than the anterior half of the glottis, the posterior being formed almost entirely by the internal border of the arytenoid cartilages. In the dog and cat, they are similarly situated.

17th. I shall not leave this subject without refuting an error generally prevalent, and promulgated in the article *voice* in the *Dictionaire des Sciences Medicale*, viz: that the anterior projection of the thyroid, has a corresponding depression on its posterior surface, to which the chordæ vocales are attached. From this it follows, that in proportion to the prominence of thyroid, is the length and anterior approximation of these ligaments. This is not true, for the greatest prominence of the thyroid, is, at its superior third, while the chordæ vocales are inserted into its inferior third.

The other ligaments of the larynx have been sufficiently described by authors. I shall not stop to examine them.

18th. *Muscles of the larynx.*—The larynx has nine muscles, two of which are anterior, the remaining seven are internal and posterior. These last are covered by a white aponeurosis unknown, until now. M. Dutrochet, who alone has mentioned it, has described but that portion covering the thyro-arytenoid muscles.

The difference of opinion which exists among authors on the action of these muscles, is astonishing. Who would believe that M. Mayer de Bonne, one of the most distinguished *Savans* of Germany, teaches that the use of the crico thyrodien muscle is to dilate the glotus, and to relax the vocal chords, and that in this office it is assisted by the thyro hyoid?

19th. The results which I have obtained by stripping the muscles of their coverings, and drawing them in the direction of their fibres, are as follows: the crico-thyroidei increase the antero-posterior diameter of the glottis, and the crico arytenoidei enlarge it laterally.

These muscles have been considered as dilators, they in fact, antagonise each other.

The action of the lateral crico-arytenoid is less easy to describe. It evidently antagonises the crico-arytenoid, and when the arytenoid cartilages are separated, it causes them to approach each other. This fact was known to M. M. Cheselden and Dutrochet, who considered it a part of the thyro-arytenoid muscle, which assists in opening the glottis when closed. To resume, it draws the arytenoid a little forward and outward; it can close the glottis only.

The three other muscles, to wit, the arytenoid, and the two thyro arytenoid, form by their union, a true sphincter of the glottis, which closes it during violent exertions, submersion, and in certain asphyxiæ. The former of these muscles, is formed in the human subject of three fasciculi, two oblique, and one transverse. The superior are inserted in the eminence on the arytenoid, heretofore described. The others, are continuous, with some fibres which have received the name of the aryteno-epiglotidean muscle.

20th. The thyro arytenoid, in relation to the voice, is the most important of these muscles. The use of the others, are especially destined to close or to open the glottis during respiration; they may, with propriety be termed muscles of respiration. That on the contrary, is passive during respiration, and operates only during the time of euphonation. Can it contract without causing vibrations of the chordæ vocales, or at least without opening the larynx? The lateral crico-arytenoidei are then sufficient for the expiratory movements of the larynx.

Among the muscles of the larynx, the thyro-arytenoid only, is mentally excitable, the others may act independently of volition.

21st. We will describe this muscle particularly, that we may refute several erroneous opinions.

Each thyro-arytenoid muscle is composed of three fasiculi, the inferior are attached to the whole inferior third of the inner angle of the thyroid; but its superior fibres arise a little more outwardly than the lower, the utility of which will be made apparent hereafter. This fasiculus corresponds to the chordæ vocales, and is inserted posteriorly in the external surface of the arytenoid cartilage.

The middle fasiculus has the same posterior attachments, anteriorly, it is inserted into the thyroid, above the preceding, farther from the median line. It corresponds to the ventricles and the median line.

The superior fasiculus or aryteno-epiglotidean muscle is a collection of a few pale fibres which extend from the eminence on the arytenoid to the epiglottis. M. Serres has seen it inserted by a round tendon in the cartilage of Santorini, and on this observation, M. Geoffry Saint Hilaire, I have sought carefully in a dozen larynges, this tendon without obtaining it; we may conclude that this tendon seldom exists, which is sufficient to destroy the theory of M. Geoffry Saint Hilaire. This third fasiculus is enclosed in the replication of the mucous tissue, which forms the superior orifice of the larynx.

22d. The muscles of the voice vary as much as those cartilages so necessary for the function of the voice, viz: the thyroid and arytenoid.

The two inferior fasiculi are separable with difficulty in the human subject; in the dog, the difficulty is less, and in the ox, it is impossible to confound them.

The aryteno-epiglotidean is in the dog, well developed, but it is pale, it is inserted in the great process of the arytenoid. The cat and lion have but one fasiculus, it is large and thick, and corresponds to the chordæ-vocales, and the interior ventricles.

Many anatomists have described another faciculus, which they have named thyro-eppiglotidean. I have attempted to distinguish it from the preceding, but without success.

23d. *Glands of the larynx.* We find in many parts of the larynx, masses of agglomerated follicles which have improperly been denominated glands. Authors have described two, viz: the epiglotidean and the arytenoid gland.

I think they are wrong in locating the gland in a space surrounded by the hyoid, thyroid, and the epiglottis. In this place, we find but fibro-cellular tissue, the meshes of which contain an oily matter. In speaking of the epiglottis, I mentioned its gland as worthy of consideration.

The second, the arytenoid gland, has been described as the cartilage of Wrisberg, its inferior part has also been confounded with the thyro-arytenoid ligaments. A third mass of follicles are placed on the aponeurosis which covers the arytenoid muscles posteriorly. It may be named the pharyngeal gland. The reason of its not having been described heretofore, is, that in raising the mucous membrane of the pharynx, the phryngean aponeurosis which lies below, is also elevated, and the gland which is between the two is not perceived. In the human subject, this gland always exists, and in the ox it is very large. Prolongations of it traverse the upper part of the arytenoid in the same manner as the epiglotidean gland does the epiglottis.

24th. Neither the ox nor cat have the arytenoid gland, it is slightly developed in the cat.

In the lion it is large, and situated in the replication of the mucous membrane, which forms the superior orifice of the larynx.

It is remarkable, that of all the animals, I have only in the human subject, with the exception of the lion and cat, found a well-marked superior glottis. Is the existence of the arytenoid gland, necessary to the superior glottis?

25th. *Vessels of the larynx.*—Four small arteries supply the larynx with blood. The study of these arteries corroborates the view I have taken of the vocal apparatus. The more an organ is exercised, the greater is the quantity of blood it receives. Therefore, the respiratory muscles, whose action is never interrupted, receive more considerable arteries than the thyro-arytenoid which are greater in volume, but which act at considerable intervals.

26th. *Nerves of the larynx.*—Numerous controversies have existed on the distribution of the laryngeal nerves. M. Magendie asserted that these nerves sent branches to the arytenoid and cryco-thyroid muscles, the actions of which are to close the glottis; the recurrent being destined for all the other muscles of the larynx.'

Mr. H. Cloquet has adopted this description. It has been combatted in Germany, by Mr. M. Rudolphi, and Meckel. M. Blandin teaches, that the recurrent nerve sends twigs to all the muscles of the larynx, with the exception of the crico-thyroid; that the superior laryngeal sends a twig to this muscle, and some others to the arytenoid, though less constantly; but that they are principally distributed to the mucous membrane and follicles.

I have seen the laryngeal send twigs to the thyro-arytenoid. We must conclude from these facts, that the distribution of these nerves, is far from being always the same. Finally, this study is nearly useless for physiology. We can never deduce from the direction of nerves, the consequences which experience confirms.

29th. *Attachments of the larynx.*—The larynx is connected to the os hyoides by a membrane and ligaments so well known, that I shall not now describe them. I shall mention a fact which has not hitherto been known, viz:' That before the thyro-hyoid membrane is a bursæ of the kind described by Beclard, under the denomination of subcutaneous. It extends from the bifurcation of the thyroid, to the cavity in the os hyoides; which cavity it occupies entirely. Sometimes it extends on either side, under the thyro-hyoid muscles. Like all synovial bursæ it is subject to hydropic enlargements, which has been described by M. Boyer, under the name of encysted tumor, in his great treatise on Surgical Diseases. This capsule appears to be the analogue of that fibrous bag which is found in many varieties of monkeys, and which opens in the ventricles of the larynx, and particularly of the osseous duct which connects the laryngeal ventricles of howling monkeys, with those enormous cavities in the os hyoides. In the human subject, the cricoid is continuous with the first trachael ring. In the other mammiferous animals which I have examined, the rings are distinct, though they are in contact, the inferior being invaginated in the superior.

28th. Internally, this organ is covered with a mucous membrane, which has peculiar properties. It is not villous, it is thickly covered with follicles, with the exception of the chordæ vocales, where it is thin. It is bedewed with an abundant exhalation, which not to increase, requires rapid absorption.

It is not red, although in contact with the air, as the intestines which are to be seen in cases of artificial anus. When inflamed, its surface secretes a false membrane.

29th. *Developement of the larynx.*—We are unacquainted with the time and order of the developement of the foetal larynx. At birth, it is completely formed; the thyroid is separated for one half its length anteriorly; the epiglottis is curved like that of the rabbit, and is not follicular; the arytenoids have considerable size. These cartilages are of a pearly white, and like all the parts of the foetus, redden on exposure to the air.

The chordæ vocales are about two lines long. The larynx developes itself moderately until the sixth year, then, remains stationary until twelve. At puberty, it experiences a sudden and great developement; the cartilages thicken and become greyish; the follicles acquire more volume and consistence. At thirty or forty years, the cartilages; with the exception of the epiglottis, become ossified, and at fifty we rarely find a larynx without some ossified depositions. In the oldest subjects I have never seen it completely ossified.

At puberty, is perceived the influence of sounds on the larynx. The larynx in man, is one-third, or according to Bichat, one-half larger than in the female. Haller says, it has thrice the volume, which I consider less exaggerated than it appears at first. The female larynx is situated so high in the neck, that it is almost concealed by the under jaw.

30th. Its size appears to be proportioned to the energy of the muscular system. Females who labor much, acquire an almost masculine tone of voice, and men who subject themselves to violent muscular exertions, have the voice more sonorous, and the larynx more projecting.

In the physiological part of this memoir, I shall treat of the influence of the generative functions on the developement of the larynx.

SECOND PART.

Of the Voice.

31st. The voice is a peculiar sound, *ordinarily* caused by the passage of the expired air through the air tubes.

I say a peculiar sound, because coughing, sneezing, and wheezing in the human subject, and the purring of some animals, as the cat, are not considered vocal sounds. I say *ordinarily*, because the voice can be produced during inspiration.

32d. Certain animals can but cry; others, as birds, possess the power of singing. Man can cry, sing, articulate, or speak. To these three great modifications, are added others of less importance, which are the tone or strength of the voice. In singing, there is the full or true voice, and the falsetto or artificial. Finally, articulation is divided into speaking, declaiming, or chaunting.

1.—*The Brute Voice, or Vocal Sound.*

33d. The air expelled from the lungs, by the expiratory muscles, traverses the air tubes silently; but at will, it produces sound, and the result is the voice. Hippocrates was the first who knew that a wound in the trachea destroyed the voice; since which time, a number of experiments have established, that the air to produce the voice must be broken against the lips of the inferior glottis.

Bichat, having opened the larynx between the thyroid and os hyoides, and bringing the epiglottis outward, saw the chordæ vocales vibrate. He split the border of the superior glottis, cut away the top of the arytenoid cartilages, and the voice was still heard; but when one-half of these cartilages were removed, the voice was gone. M. Magendie performed the same experiment, and satisfied himself that during the low tones, the inferior thyro-arytenoid ligaments vibrated throughout their whole length, and that the glottis was perfectly dilated.

In these experiments there is some inexactness. On the one side, we do not know how far Bichat incised; for the difference between the arytenoid of the human subject, and that of the dog is very great. On the other hand, the traction exerted on the epiglottis may have had some effect on the opening of the glottis, particularly as the epiglottis in the dog is joined to the thyroid cartilage. Finally, the opening made in the larynx was too minute to allow a successful inspection. We must remember, that in the dog the thyroid is articulated with the os hyoides posteriorly, and very contiguous anteriorly.

M. Despiny, who tried the same experiment, avers, that from it he could draw no positive result.*

34th. These remarks are necessary to explain the different results obtained by me.

Experiment 1st.—On a dog of middle size, I divided the lower jaw near the junction of the body with the rami of the bone; I detached on the superior side the muscles of the tongue, which allowed me to see the glottis distinctly. The cries of the animal became weaker and more acute; they resembled those of a goat. I observed the glottis attentively; its borders separated during inspiration, and it assumed a triangular shape. During respiration, they approached each other, and formed a narrow slit. When I irritated the animal, the arytenoid cartilages approached each other, and the air and voice passed between the chordæ vocales, which were distinctly seen to vibrate I removed the epiglottis and the superior glottis; I excised the arytenoid cartilages in such a manner as to leave only, those parts necessary for the action of the chordæ vocales; the voice became weak and slightly nasal, although it still existed.

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* Melange Physiol. par M. Despiny, page 26.

Experiment 2d.—The glottis of a middle-sized dog was exposed to view, as in the preceding experiment. I dissected the mucous membrane of the posterior part of the glottis, in such a manner as to prevent the egress of the air. The voice was unaltered, the air passing through the anterior part. I then closed the anterior part, and the air passed posteriorly between the arytenoid cdrtilages, and no sound was produced. Thinking that the air was not expelled with sufficient force, I made a transverse incision in the trachea, introduced a quill, through which an assistant blew strongly, while the animal was irritated with a red hot iron. When the anterior part was open, the voice sounded loudly; but when closed, and the air passed posteriorly, no sound was heard. I left a considerable interval between these two experiments, that the animal might recover its strength; for the sensibility of animals, tortured in experiments, becomes so diminished, that they do not feel the latter part of the operation. Some may see, with surprise, that I employ the hot iron, since all the conditions necessary for the existence of the voice did not exist. But when the animal was not irritated, it was necessary to blow in the trachea, and then but feeble tones were produced. This illustrates the assertion of the elder Jadelot, that nervous action is necessary for the production of the voice, and that it is a vital phenomenon. What are we to think now of the experiments of Ferrein, so inconclusive, that many academecians, before whom they were performed, deny the results he pretended to obtain.

I have repeated those experiments of Ferrein, and I object to them, for the following reasons:

First. It is difficult with his method to obtain sound.

Secondly. The voice is choked, and has little resemblance to the natural tone of the animal.

Thirdly. It is necessary to make the chordæ more tense than they are ever found in the living state; also to stretch the thyro-arytenoid muscles, which in the living animal are in a state of contraction during the act of phonation.

36th. From the two preceding experiments, it is evident that the anterior half of the glottis, formed by the chordæ vocales, is the organ of voice. It is necessary for their vibration that they approach each other, and that their inferior extremities are in contact, which proximity will produce between them an eliptical slit. I have not seen with M. Magendie, the glottis entirely open during the gravest tones. When I have enlarged the glottis by separating the arytenoids, the voice ceased.

37th. It remains for me to confirm or destroy the theory of M.

Dutrochet, who denies the influence of the chordæ vocales, and attributes the sound to the action of the thyro-arytenoid muscles.

Experiment 3d.—The glottis of a dog was exposed, as in the preceding cases. With a scalpel I divided one of the vocal chords. The animal suffered much, expired forcibly, but no sound was produced. The application of the hot iron excited in the larynx a low and choked sound;—when I divided the other, it was impossible to obtain any sound.

38th. The assertion, that the voice is caused by the vibration of the thyro-arytenoid muscles, is shown to be false. Are these muscles passive? No; the loss of voice which follows their paralysis, whether caused by apoplexy or the section of their nerves, is proof of the contrary. The paralysis of one of these muscles is sufficient to produce aphonia.

Experiment 4th.—A larger dog, in which my friend, M. Collard de Martigney, studied the effects of prolonged abstinence, had been placed in the pavilion of the Ecole Pratique; and urged by hunger, made the neighborhood resound with the most frightful howling. He divided the pneumo-gastric nerve, and the voice was no longer heard. When the wound healed, and the divided nerve had reunited, the howling recommenced. M. Cruveilhier has recourse to this operation, to silence the cries of the dogs submitted to his experiments. Is there any necessity now of combatting the arguments of M. Dutrochet? "If the voice," says he, "be caused by the chordæ vocales, the larynx must be passive." That the chordæ vocales are passive, I admit; for we cannot conceive of an active instrument that is causing sounds by itself. The larynx is not passive; the thyro-arytenoid muscles possess a manifest influence, analagous to the lips in playing the clarionet or hautboy.

"But," continues M. Dutrochet, "when the thyro-arytenoid muscles contract, the vocal cords are relaxed, and cannot vibrate." This objection is unfounded;—in the first place, we see them vibrate; and anatomy demonstrates to us their enormous elasticity. Thus, when the thyro-arytenoid muscles contract, they are less tense, but sufficiently so for vibration. In the same manner, on stringed instruments, we can vary the degree of tension, and produce a grave or acute sound.

40th. Experiments made on dogs, show that the voice is formed by the approximation and vibration of the chordæ vocales; but we are ignorant of the use of the superior thyro-arytenoid ligaments. They do not exist in the dog; the superior glottis is formed almost entirely by the great arytenoid process, and is completed by the aryteno-epiglottidean muscles.

41st. In all these experiments, contrary to the assertion of Bichat, the voice was always altered: it was more acute—sometimes nasal. These alterations were manifest to all those who assisted me in my operations; they also existed when I opened the larynx, between the os hyoides and thyroid cartilages, as recommended by Bichat.

In those dogs whose under jaw I divided, I varied the strength, tone, and fullness of the voice, by separating or approximating the walls of the buccal cavity. The sound, after being formed in the larynx, is modified in the upper part of the vocal tube. These modifications must be now considered.

42d. In certain cases, the sound and the expired air pass through the nares, as in singing with the mouth closed. The same result can be obtained with the mouth open; but on inspecting the mouth, we perceive the base of the tongue elevated, and the curtain of the palate depressed in such a manner as to close the cavity of the mouth posteriorly. This depression of the velum is produced by volition, and refutes the opinion of a celebrated physiologist, who considers the movements of the velum independent of the will. In other cases, the voice and expired air pass through the mouth only. These cases are more rare than is generally supposed. I have observed a number of times, after a long race, a violent exertion, and during hurried expiration, that the sound and air will pass at the same time through the mouth and nares. The flame of a taper will be seen to flare, when held before the nares during the act of articulation.

43d. When one speaks in the tone of an ordinary conversation, does it resound in the nasal cavities? Those who deny this, are supported by M. Magendie, whose authority, though considerable, must give way to facts.

First. By making a grave and prolonged sound, the expired air passing through the the mouth, we feel the nasal cartilages vibrate distinctly. This vibration is heard also when we sing with the mouth closed, the voice then resounding in the nares.

Second. If we with a mirror observe the back part of the mouth, we will perceive the velum depressed, and widely separated from the pharynx, that the voice may with facility enter the nostrils.

Third. The objection to the resonance of the voice in the nostrils is, that the sound would be heard through the eustachian tube better than through the meatus auditorius. This is precisely the fact, and may be readily perceived; for, by stopping the ears, the sound is heard much louder than by the ordinary way.

44th. The anatomical inspection of the nares, should, of itself, be sufficient to remove all doubt. In the recent state, the nasal fossæ form a high and concave arch, in which four osseous lamina are suspended, viz.: The three cornua and the unciform process of the os ethmoides, which is between the middle and inferior cornua. There are a great number of cavities for the reception and reverberation of sound; and what is remarkable, they are all open posteriorly, with the exception of the sphenoidal sinus, which is situated very high, and receives the sound reflected from the nasal arch. In the superior meatus, are two orifices which lead to the posterior cells of the ethmoid. In the middle meatus, are three orifices, leading to the anterior cells, to the frontal sinus, and to the maxillary sinus. These orifices are disposed to receive the expired air only. The opinion of those who conceive that these cavities are for the greater expansion of the olfactory nerves, is certainly erroneous.

I am aware that there are some facts in comparative anatomy, which apparently corroborate my opinion;—for instance, in the dog the nares are very considerably developed, and its nasal cornua are greatly multiplied. In dogs, the sense of smell is very acute, and the voice, in many instances, is far from being sonorous.

Here, as in many other cases, there is no room for induction,—the objects are not to be compared. The nares of the dog are so arranged that the inspired air alone can enter the various an. fractuosities. To be assured of this fact, it is only necessary to examine the head of a dog sawed vertically.

45th. The situation of the nasal sinuses, open to sounds, but closed against the entrance of odorous bodies, together with their developement, furnish us with striking arguments in favor of the opinion I have advanced. In the child just born, the voice is weak, the larynx small, and the nasal cavities may be said scarcely to exist; there are neither sinuses nor cells; the arch is flattened, and its anterior parieties are very small; the nose projects but slightly. These parts are semi-cartilaginous; as they become ossified, the voice acquires more strength and gravity. From the sixth until the twelfth year, these organs are stationary; the larynx does not change, and the countenance preserves its infantile expression. At puberty, a new excitement animates the genital organs; the larynx connected with them, by great and inexplicable sympathy, increases in size and consistence; the expression of the countenance undergoes considerable change. The infantile character, depending particularly on the smallness of the inferior jaw and slight projection of the nose, disappears. These changes are more evident in the male than female. The nose increases in size and projection; the angle formed by the lower jaw and its rami, becomes nearly a right angle; the face lengthens and enlarges, in proportion to the developement of the sinuses. When we observe the larynx, we perceive the ponum adami descend and become very prominent, and in the genital organs erections and involuntary seminal discharges ensue. The voice at this time, is neither weak like the infant's, nor is it firm like that of the man; but changes each day like an instrument in the hand of the workman.

Finally, the growth has terminated; the expression of the countenance, and the tone of the voice are fixed, until they are modified by age or exercise.

46th. I consider that the development of the nasal cavities is intimately connected with that of the larynx, which is also connected intimately with the genital organs. Perhaps this coincidence may explain a fact hitherto inexplicable, which though false in some instances, is so true in many, that it has been considered an axiom by the cynical poet of love.

"*Noscitur ex naso quanta sit hasta viri.*"

It has been said by some, who perhaps have not paid sufficient attention, that eunuchs preserve the acute voice and infantile expression of countenance; and that the check given to the developement of the genital organs, affects also that of the larynx and nasal cavities.

47th. I have established as a principle, that by the prominence of the nose we can judge of the gravity or acuteness of the voice. It was from my anatomical investigations that I inferred, *à priori*, this effect. I observed men and women, of all ages; and after a score of prognoses, which were verified, I conceived that I had a right to advance my theory, to which I have found few exceptions. As my observations now are multiplied without measure, I conceive it to be certain and applicable to all cases.*

I have never seen a man or woman with a flat nose have a grave voice;—with such voices, we always find a large nose. In those who sing thorough-bass, it is enormous; for example, observe the singers in our cathedrals. On the other hand, I remember to have seen a girl whose nose was so flat, that it had the appearance of having been crushed; her voice was shrill, piercing, and, at the same time, nasal.

48th. Pathology furnishes us with new proofs. I have frequently observed the voice change during a catarrh; as the irritation in the nostrils augments, the tone changes, becomes nasal, and sometimes has a crying sound.

49th. An objection here presents itself, viz.: That if the sound is partly transmitted through the nose, how is it that air is not at the same time passing through the nares? I have, as M. Magendie pointed out, sung in a loud voice, with a lighted taper near my nostrils, and observed that the flame was not disturbed. Furthermore, we can produce clear sounds with the anterior nares compressed between the fingers, so as to prevent the passage of air.

50. This objection does not invalidate any of the proofs on which my theory is based; it is, however, worthy of an explanation. We should distinguish the sound from the air which carries it. The tone or sound is reflected by the air, the vibrations of which are perceptible to the ear only. In such churches as have sounding roofs, the sound of the organ, the voices of the priests and people, cause the arches and windows to vibrate, and at the same time, the flame from the censors

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* I have found some exceptions. The celebrated Mastin possessed thorough bass and counter-tenor notes; and there are other artists who have the same faculty, which depends on the great mobility of the larynx, and a faculty acquired by exercise, which consists in depressing the larynx and velum, consequently increasing the length and breadth of the vocal tube, more than ordinary singers.

burns quietly on the altar. If a window were open, the sound in the act of escaping would not agitate the flame of a candle therein placed. This experiment may be tried on a small scale; for instance, remove the ivory button, which is generally found on the base of a guitar, and the hole which it filled will allow a free passage to the air; then, by striking the chords, the vibration of the whole instrument will be perceptible to the touch, while the flame of a taper, placed opposite the hole, will not be agitated.

51st. This experiment suggested another, which to me appears conclusive. In the place of the ivory button in the guitar, I substituted a tube, two inches in length, and two lines in diameter, intended to concentrate and direct the air towards the flame of the taper. I then pasted strips of paper over the larger hole, until it was sufficiently small: in this hole the extremity of a flageolet, which had no lateral holes, was inserted. In this state of things, a part of the air traversing the instrument, ought to pass into the guitar, and out through the tube. I sounded the flageolet, and the air passing through the tube, agitated the flame of the taper.

I made another opening in the paper, which covered the larger hole, and ascertained that the flame of the taper opposite the tube was not affected when I sounded the flageolet; but when the last made hole was covered, the flame of the taper vaccillated. Do not these experiments illustrate a part of the phenomena of the voice? When we speak with the mouth closed, the air and sound pass through the nares; and when the mouth is opened, the reverse ensues. It appears that the portion of air which penetrates the nasal fossæ and their anfractuosities, is with the sound reflected by the arch and sinuses, and escapes by the mouth, like the tone in a flute, which is sounded with the inferior hole closed, the air produces a more grave sound as it escapes by the lateral holes.

52d. The voice then is the result of the air expelled the lungs, traversing the trachea, and causing the vibration of two elastic lamina, situated in the anterior part of the glottis, then resounding in the nasal cavities, and finally by escaping the mouth.

After what has been said, we cannot fail to see its similitude to a wind-instrument. But there are many conflicting opinions. Dodart's, which was adopted by Liscovius, was, that the chordæ vocales were idle, and that it was the dilatation and contraction of the glottis which caused the sound.

M. Ferrein considered it to be at the same time, a wind and stringed instrument. Cuvier, compared it to a flute; Richerand to a French horn; M. Savard to a bird call. M. Geoffrey St. Hilaire thinks that it acts sometimes, like a reed of musical instrument, and again like a flute.

Mr. Mayer unites the theories of Dodart, and Ferrein, and speaks of the importance of the tube, and its being furnished with what he terms three suckers, viz: the epiglottis, the tongue, and the velum palati. The theories of Dodart, Mayer, and Ferrein, have been exploded, and M. Dutrochet has successfully refuted that of M. Cuvier. I will observe, that there is no instrument with a tube of six inches in length, which can produce such effect. The sound can be produced even when the superior part of the vocal chords have been destroyed. The glottis in this state, not only produces a vocal sound, as is established in our first experiment, but we shall show that it produces varied tones.

It remains then to adopt with M. M. Dutrochet, Biot, Magendie, and F. Despiney, the theory of the reed; at the same time, its supporters have encountered so many difficulties, that they would fain reject this analogy.

If we compare the larynx with the reeds of an organ or clarionet we shall find in the first, two vibrating lamina, and but one in the other. In the hautboy or bassoon, there are two lamina; but first, they are solid; secondly, they are unattached on three sides; thirdly their tone is varied by diminishing their length; fourthly, all artificial reeds vibrate exterior to the tube, while the vocal chords vibrate in the inside of the tube; fifthly, the chordæ vocales vibrate equally in expiration, as in inspiration, while reeds, on the contrary, vibrate in one manner only.

These difficulties (are insurmountable in this theory) which although it has some appearance of truth, and is best sustained, can never be generally adopted.

54th. All fine and elastic lamina susceptible of vibration, when influenced by a stream of air, are called reeds. They may be divided into four kinds. The double reeds are formed, by the union of two lamina, in such a manner as to bear an eliptical space between them. The single are formed, by the vibration of a single lamen, over the gutter of a semi-cylinderical canal. They are used indifferently to obtain the same sounds; but double reeds require the lips of the player, as in the bassoon, and haut-boy. On the contrary, the single reed requires but a sufficiency of wind in order to produce sound. Hence, the single reeds are preferred for the organ. Each of these two kinds, are subdivided into two others, the hard and inflexible, as in the instruments named, and those which are so flexible that they must be made tense to vibrate. The inflexible reeds only, are used in making musical instruments.

55th. Take two pieces of wood, six inches long, united in such a manner, as to leave an eliptical space between them, along which extends a silk or parchment ribbon, and you will have the simple and flexible reed. The breath traversing this space, causes the ribbon to vibrate, and produces a sound more analagous to the cry of some animals, than that produced by any other instrument. Here the reed is fixed at its extremities, and by making it more tense, or diminishing its length, more acute sounds are produced, and, like the chordæ vocales it can vibrate in a current of air in either direction. M. Ferrein declared that no other instrument could so justly be compared to the larynx.

56th. The fourth reed consists of two ribbons, made tense, and interposed between the lips. By blowing, the lips vibrate, the vibration is communicated to the ribbons, and sound is produced. This is perfectly analagous to the human larynx.

57th. I have been thus minute in illustrating these points, for on them, is based the new theory of the voice. As I have already observed, the thyro-arytenoid muscles perform the office of the lips of the musician; the chordæ vocales are the flexible, elastic, and vibrating lamina of a reed of the fourth kind, that they may vibrate, it is necessary their extremities should be fixed, their borders are only free and their varieties of tone depend on their length and tension. In both instruments, sound is produced by expired or inspired air, by the smallest quantity, as by the most rapid current.

After hearing the altered voice of a dog, whose larynx has been opened, the resemblance it bears to the sounds produced by the reed of the fourth kind, is readily perceived. Perhaps no other instrument could produce such similarity of sound.

In the construction of the human body, nature has made use of that power least used by man, viz: that lever in which the power is between the fulcrum, and the resistance. In the construction of the organs of voice, she has adopted that form of instrument which has never been used by man.

59th. When the reeds have no tube, the sound is sharp, and often nasal. Experiments on the human larynx have shown us similar effects. In organs, there are conical pipes, provided with reeds, of about six inches in length, for grave tones, and about four for acute. These tubes give the notes more force; their larger extremities are partially covered by semicircular metallic plates, which form a true sounding sinus, and allow an opening for the sound and air to escape.

60th. There is a slight difference whichit may be well to observe. Many authors have said that the vocal tube in man, was conical with the base exteriorly. This is not correct, the tube is at first widened, then it contracts; it resembles two truncated cones, united at their bases. This formation of the tube, gives the sound more fulness. Experience has taught this fact to musicians, and makers of musical instruments. Now, those instruments which approach nearest the human voice, are formed in this manner.

61st. The use of the epiglottis has been explained by M. Magendie. I shall indicate the changes which M. Mayer has observed in the position of this cartilage, during the production of different tones.

62d. Can we explain so satisfactorily the use of the ventricles? Some wind instruments are provided with a mouth-piece, a contracted part of the tube which conducts the wind into the sounding portion of the instrument. We find one at the end of the double reed of the bassoon. The differences which I have pointed out between this instrument and the larynx, account for the non-existence of its like, in the last. In the French horn and trumpet, which are more analogous to reeded tubes, the opening of the mouth-piece is so large, as to permit the lips of the musician to vibrate; it is then suddenly narrowed. I do not wish to compare the sonorous lips of the glottis with the lips of the horn-player, which last, may with propriety, be called a mute reed. With reference to the disposition of the reeds, and the mouth of the instrument, the resemblance appears to me to be perfect, and the ventricles at the entrance of the tube, narrowed by the thyro-arytenoid ligaments, constitute a true mouth-piece.

63d. Thus, a double and flexible reed, as heretofore described, with a mouth-piece, and sounding tube, constitute the instrument of the voice. M. Savart, in an elaborate memoir which abounds more in argument than facts, objects to comparing the larynx to the reed of a clarionet, which, I admit, there being no analogy between them. When the ligaments are separated, to render the analogy admissible, there ought to be no sound. Now, this is what really occurs, when the separation is considerable.

Again, he asserts, that in singing, they should be in contact, which I shall demonstrate is the case. M. Savart, observes, that it requires great efforts to produce sound; the thyro-arytenoid muscles are powerful, and we cannot admit that when contracted, they would bend in an inconsiderable current of air.

64th. Have not muscles many degrees of contraction? Are the thyro-arythenoidei so strong as to overcome the whole of the expiratory muscles to which may be added, the lateral and posterior crico-arytenoidei? To the assertion of M. Savart, that the human voice is far from being similar to the sound caused by reeds, I will reply, there is no manner of imitating the voice by any other instrument.

(*To be concluded in the next number.*)

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FEVERS ILLUSTRATED BY DISSECTIONS.

The words πῦρ, πυρετὸς, in the works attributed to Hippocrates, are used to signify heat of the skin, which the author believed to be the essence of fever; but Galen applied the term πυρετος to the disease termed by the Latins, *febris*. The notions which the ancients held respecting fever, were highly ridiculous; they believed that it served to expel some corrupted humor. In a word, they were humoralists. Hoffman began the reform. He says, "*Attenta tamen in omni morbo, seu statu præternaturali, observatione compertum habemus, motum illum vitalem a partibus interioribus ad exteriores, constrictione minimorum vasculorum fibrillarum spastica, valde intercipi ac inverso plane cursu, a circumferentia ad centrum urgeri, et deinde rursus cum impetu a penetralibus ad ambitum, accelerata systole et diastole agi, qualis motus, si universum corpus afficit, febris dici solet.* (Med. Rational. Systemat. Tomus Tertius Caput IV. De Geneologia Morborum, p. 59–60. Edit. Secund. Halæ, Magdeburgicæ MDCCXXXII.) Cullen seized this idea with unbecoming self-esteem, and unjust behavior towards its author; on it he established a beautiful hypothesis of fever. Alas, it was but an hypothesis; for in spite of its captivating garb, when canvassed in the French, German, and Italian schools, it dwindled into nothing; and now it is ranked with those freaks of the fancy, which though ornamental, and appropriate in belles-lettres, in our profession, only serve to gratify the dangerous speculator, and bewilder the philosophic student. Brown, the pupil of Cullen, (than whom he certainly professed more genius and learning, notwithstanding he professed to despise his master, and treated him with a species of unmerited contumely,) though he differed with him on important points, only tortured the gratuitous assertion of debility, about which Cullen made so much noise.

From this time, solidism has prevailed with a few exceptions, the most prominent of which I shall now mention.

Dr. Stoker, one of the physicians to the Cork-street Fever Hospital, in Dublin, attributes adynamic fever to morbid changes of the blood, and refers the structural alterations to the said changes. This is fluidism with a vengeance. (*See his Pathological Observations on Fevers.*)

Dr. Burn, of London, asserts, that typhoid fever has no local seat; but that it depends on a diseased condition of the blood, by which the energies of the nervous system are paralysed, so that all the functions of animal and organic life are imperfectly performed. Let the impartial reader examine his *Practical Treaties on Fevers.* and he must observe, that he has offered no good reason for his conclusions.

Dr. Stevens, of St. Thomas, has produced some persuasive arguments in favor of humoralism. He maintains that the blood in fever, is always diseased; that neutral salts render venous blood red, and that acids give red blood a black color. On these facts, he has established a beautiful theory of fever, which he briefly sketched out for the College of Physicians of London; but as he has not fully developed his views, it would be unjust to criticise them. I shall only say, that the facts above mentioned, were known before the ingenious essay alluded to was written; but that he was the first to systematise and apply them to the treatment of disease.

The last humoralist I shall mention, is Dr. Clanny, who, in a lecture upon *Typhus Fever*, endeavors to prove that fever depends on imperfect chylification, which, by the way, he calls a function of the brain, and likens it to secretion. The upset of the whole of his curious notions resides in the fact, that without chylification there cannot be sanguification, and that the imperfection of the latter is the cause of fever.

The physiologist can neither be an exclusive solidist nor humoralist, he admits the reciprocal influence of the solids and fluids, and agrees with Bichat, "*Une théorie exclusive de solidisme ou d'humorisme est un contre-sens pathologique.*"

The exclusive humoralist insists of necessity, that fever is a general affection, whilst the solidists, though they for the most part admit that it is so, do not fail to shew that it sometimes depends on local inflammation; hence, their division of fevers, into essential and symptomatic. That this broad division is unfounded, I virtually believe, because in all the post-mortem examinations I have made, or seen made of fever subjects, I have never yet observed one case where structural alteration did not exist; therefore, I cannot help fostering a disbelief in the existence of what are called essential fevers. I must confess, that I have seen many cases in which no particular local symptoms were developed, and the patients recovered; but I have seen similar cases which proved fatal, and on dissection, extensive organic devastation was detected. It may be asserted by others, and indeed, some have been fool-hardy enough to insist on the absence of organic lesion in fever patients; but they ought to have recollected, that if there be such a disease as simple continued fever, it is very improbable that it can destroy life, at least without serious structural mischief; for it cannot be denied, but that the functions are dependent on the organs, and no physiologist now-a-days, free from the trammels of bigotry and mysticism, attempts to explain any function without a reference to the organ that produces it. Indeed, it is the very essence of absurdity, to suppose that any function can be deranged while the organ which gives rise to it, is healthy.

It may be urged, in opposition to what I have just asserted, that in some diseases, as mental alienation, the brain is often found in its normal condition. To this I reply briefly, that I have never yet, among the many lunatics I have examined, found a single brain free from disease. I must admit, however, that in some, but little alteration from the normal state, could be detected, and that in others, no proportion existed between the symptoms and the morbid appearances developed by dissection; but this is no more remarkable, than that one man bears pain better than another, or that two persons with similarly developed heads, possess different powers of mind. Is not the pathological fact well established, viz: that one person will sink under an amount of disease, which another can easily resist? But, to proceed further, I will even admit, that skilful pathologists have failed in detecting the slightest alteration in structure of the brain of certain maniacs. But is this any argument, that no structural alteration existed in these cases? Is such an opinion favored by analogy, reason, or experience? Are we not rather to attribute such failures to the imperfection of our senses, to the limited extent of our actual knowledge, and to changes induced by the absence of the *vis vitalis*?

Some persons who admit that local derangements are always found in those who perish from fever, believe that in many cases the local affection is the consequence, and not the cause of fever. To support this opinion, they say, that symptoms of inflammation of the brain, lungs, stomach, &c., sets in during the course of the fever, and that organic derangement is accordingly found on examination after death. This, to the ignorant or prejudiced, is all-sufficient; but is quite inadequate to satisfy the philosophic inquirer. Let us see how such believers will answer the following queries. Do all the symptoms and morbid appearances correspond? Are not morbid appearances detected by dissection, in cases in which the most accurate observers did not suspect them? Do not symptoms indicative of local derangement spring up in the course of fever, and are not the morbid alterations found after death, frequently too great, for any rational pathologist to believe that they were created at the period of the setting in of the symptoms, and matured since? Are there not derangements during life, which are invisible in death? Finally, does not the disease of one organ subside in proportion as that of another is generated; therefore is it because one organ becomes diseased in the course of fever, and leaves traces observable in death, that a distant organ in which no traces exist, should not have been primarily affected? When these questions are undeniably answered in favor of such advocates, I shall change my opinion.

The authors who uphold the local origin of fever, are at variance amongst themselves, Broussais and his followers, locating it in the stomach, while Clutterbuck and his tribe, seek for it a habitation in the brain. That the stomach and brain are sometimes healthy in fever, that at other times, they are secondarily affected; therefore, that fever does not necessarily emanate from, and effect them, though it does so, very frequently, will be proved by the ensuing dissections.

Those who had not the light of pathological anatomy, to enable them to steer clear of those delusions of the fancy, termed artificial arrangements, have in their classifications of fever, made divisions and subdivisions of the same disease, and from the manifestation of effects which they did not, nor could not, from their ignorance of pathological anatomy, understand, formed ideas, necessarily erroneous, of the operation of the causes which induced them; hence the origin of symptomatic and methodical pyretology. I should be sorry to be understood as wishing to say that all fevers are the same; this would be at variance with observation and reason; for the organ, or organs primarily or secondarily affected, as well as the extent of disease, the age, sex, and susceptibility of the patient, the power of the exciting cause, and the locality and treatment of the patient, will cause variations in the disease, which must bring it, more or less towards one or other of the forms laid down by nosologists; but the very same circumstances will, at the same time, create such inextricable complications, as to prevent any thing more than an approach to any given head. This, to those who systematise in the closet, who instead of inspecting the sick, and practising dissections of the dead, prefer scanning the fragments of Hippocratic semiology, reconciling the clashing absurdities of by-gone medical literati, censuring the vulgar rage for revolting manipulations of the dead, and declaiming against the unscholarly method of revealing disease with the scalpel and injecting pipe, will no doubt condemn all attempts to shew the futility of their learning, and to establish, instead thereof, that concatenation of effects produced by the operation of a single cause, and the mutual relation of organs, which are more consonant with the nature of man. But the work which Bichat began, and Broussais continues, has too many inducements for those who are interested in their profession, to forego.

Let the student only read the nosologies of men well versed in medical literature, even the *Nosographie Organique* of Pinel, and then after a sound erudition in the structure and functions of the human body, let him visit the sick, and examine the dead in a fever hospital for a sufficient length of time, and I will vouch for it, that he will agree with me in the following axioms.

1st. That fever has a local origin.

2d. That one or more organs may be affected in the course of fever, and that no organ in particular, is of necessity, primarily effected.

3d. That the classifications of fever heretofore maintained by nosologists are unjust, and that the disease does not admit any precise arrangement.

The cases which I am about to relate, are intended to illustrate these facts.

Case 1st. Private Michael Wood, of the 3d Vet. Bat. on the 14th April, 1826, was seized with the leading symptoms of high fever, his head being particularly affected. At 12 o'clock on the night of the 18th, he became first delirious, then for a time, insensible. On the morning of the 20th, the delirium returned, and the muscles of the left side of his face became paralyzed. Up to this period, venesection had been freely and repeatedly practised. In the commencement, the Tart. Ant., and afterwards purgatives were administered, and blisters applied. The delirium subsided in the course of the day, but towards evening, he began to speak incoherently, and continued so to do until 2 o'clock, P. M. of the 21st, when after arteriotomy, he fell into a sleep from which he awoke, quite sensible, complaining of pain in his head. At 12 o'clock, P. M. he was again attacked with delirium, and expired in a convulsion, at 4 o'clock, P. M.

Sectio Cadaveris.

Head. The dura mater in the course of the great longitudinal sinus, and in the occipital region, was highly vascular. On puncturing this membrane, much serous fluid issued from beneath it. The surface of the brain did not appear much more turgid than natural, but there was beneath the arachnoid membrane, on the surface of each hemisphere, particularly towards the posterior part, much sero-puriform matter. The substance of the brain was of natural consistence, and when cut into, blood issued from many points. The ventricles were much distended with fluid, and their lining membrane was more consistent and unyielding than in the natural state. Puriform matter was also found beneath the arachnoid, on the inferior part of the brain, but in smaller quantities than on its superior aspect. I divided the cerebral mass very minutely, but could not discover the slightest bloody extravasation.

Thorax and abdomen—Healthy.

Pelvis.—The bladder was much distended, but free from structural disease.

Case 2d. Private Michael Gleeson, on the 24th of April, 1827, was attacked with symptoms of high fever. His head and chest were particularly affected. He did not enter the hospital until 2d of

May, when his pulse was 116, and the other symptoms were at their height. He was now purged, bled, and put on a solution of Tart. Ant. On the 3d, the local symptoms, especially the pectoral, had increased, his pulse had risen to 128, but was small. A blister was applied to his chest, and he was put on calomel and antimonial powder. On the 4th, low symptoms were manifest—pulse 140, small and weak, great cerebral disturbance as indicated by prostration of the animal functions, low muttering delirium, &c. &c. From this until the 6th, he continued to sink, notwithstanding the exhibition of wine and other stimulants.

Sectio Cadaveris.

Head.—The superficial cerebral vessels were in a state of engorgement. When the brain was cut into, blood issued from many points, and it was particularly dense.

Thorax.—The left lung lay collapsed against the mediastinum; it was not more than half its ordinary size, and when cut into, was found nearly impervious to air, with many crude and solitary tubercles pervading it. The corresponding pleura was half filled with straw-colored serum, mixed with flakes of coagulated lymph, and was lined with an adventitious membrane of recent formation, which was easily separated from it. The right lung was sound, with the exception that it contained a few tubercles.

Abdomen—Healthy.

Case 3d. Private Luke O'Neil, of the African Corps, on the 7th of May, 1826, was admitted into hospital, laboring under high febrile symptoms, attended with pain in the right side of the thorax, cough and expectoration. The attack commenced two days previously, after exposure to cold; the day before his admission, he had nausea, pain in the epigastric region, and troublesome vomiting. He was bled, fully purged, and blistered on the affected side of the breast with benefit; but on the following day, gastric irritation set in, attended with low symptoms, but without any abatement of the pectoral disease, for the relief of which, all the usual means were had recourse to. The gastric symptoms increased, coupled with extreme debility, under which he sank on the 13th of May.

Sectio Cadaveris.

Head, no morbid appearance.

Thorax.—The left lung adhered partially to the upper part of the thoracic cavity; but its structure was perfectly sound. The right lung adhered universally to the pleura costalis by bands of old formation, and when removed, the inferior lobe was found quite sound; the upper edge of the middle lobe, particularly near the fissure, formed by it and the upper lobe, was in a state of incipient inflammation;

the upper lobe was hepatized, when divided, bloody serum was discharged, and the cut surface disclosed a small firm granular texture, interwoven by membranous bands. Almost all this lobe, was thus affected, and the line of demarcation between the healthy and diseased parts, was well marked.

Abdomen.—Liver much enlarged, of the soft adhesive consistence, and on its superior surface there was a well-formed cicatrix. The gall bladder was contracted, and contained a small quantity of dark bile. The spleen was somewhat enlarged, softened, and coated with a thin layer of coagulated lymph. The peritoneal tunic of the stomach, small intestines and arch of the colon was slightly inflamed, with portions of lymph adhering to it in different places. The cavity of the abdomen contained about three half pints of straw-colored fluid, and about the root of the mesentery, and among the intestines there was a thick puriform fluid deposited. The stomach contained about a pint and a half of dark colored fluid, resembling cystic bile; the mucous membrane was universally corrugated, thickened, pulpy, and of bright red color, particularly towards the bulging extremity. The mucous membrane of the small intestines and arch of the colon was also inflamed; but to a much smaller extent than the stomach.

Case 4th. Private Richard McClure, who had served in India, and suffered from hepatic disease, was admitted into hospital on the 2d June, 1826, with symptoms of high fever, which under moderate antiphlogistic treatment, had by the 4th, nearly subsided. On the morning of this day, he complained of pain in the right iliac region, which was increased by pressure and attended with symptoms of gastric fever. General and local blood-lettings were had recourse to, and enemeta administered, but without benefit. Symptoms of low fever set in, the prostration was great, he could not speak, and was devoid of sensibility. A consultation was held between Doct. Skey, Staff Surgeon Millar, Assistant Surgeon Ercutt and myself, when it was determined to try transfusion. I accordingly took the blood from the arms of two of the medical officers, and transfused about thirty ounces. Every time I forced the syringe, he opened his eyes widely, and raised his head, neck, and shoulders, from the bed. After the operation, he rallied a little, but died the same night.

Sectio Cadaveris.

Head.—No disease, but the dura mater and substance of the brain were tinged yellow.

Thorax—Healthy.

Abdomen.—The peritoneum lining the small viscera lodged in the right iliac region, was inflamed, thickened, and covered in many places, with coagulated lymph. The mucous membrane of the stomach was inflamed, softened throughout its entire extent, and presented a petechial appearance; that of the other viscera was in many places slightly vascular. The spleen was much enlarged, and of a more solid consistence than natural. The liver was greatly enlarged, and indurated; its superfices was irregular and presented much puckering, the consequence of ancient suppurating cysts. When cut into, its structure was condensed and amorphous. The gall bladder was contracted, and contained but a small quantity of bile.

Case 5th. Private John Flower of the 43d, Regt. a malingerer, who feigned epilepsy—he had an issue inserted in the nape of his neck, which, on the 3d of June, 1826, was surrounded by an erysipelatous blush, accompanied with symptoms of high fever, his head being particularly affected, as marked by delirium ferox. The most active remedies were employed, nevertheless he died on the 9th day of his disease.

Sectio Cadaveris.

Head.—The cranium was remarkably thick and furrowed out for the reception of vessels. The brain was surcharged with blood.

Thorax.—No disease.

Abdomen.—Liver slightly marbled, and rather hard; no other lesion could be detected.

Case 6th. Private Samuel Fanning, æt. 46, of the 31st Regt. was attacked with symptoms of high fever, at Tilbury Fort, on the 26th August, 1826; his head being particularly affected. He was bled twice in the commencement of the disease; an emetic was exhibited, followed by a purgative, and cold aspersions were had recourse to. He was much better on the 10th day, and took in the evening, an anodyne diaphoretic; but at half past five o'clock on the following morning, he was found in a comatose state, with stertor and heavy moaning, having unconsciously voided some very fetid matter per anum. A blister was applied to his breast, and stimulants administered, but without benefit, for he died at 10 o'clock, P. M. It is worthy of remark, that he had a short paroxysm of ague at, 1, P. M., after which he appeared rather more sensible.

Sectio Cadaveris.

Head.—The surface of the brain was loaded with blood, when cut into, many bloody points were observable, and its substance was very firm.

Thorax—Healthy.

Abdomen.—The liver, spleen, and portal system generally, were very turgid. Half of the spleen was converted into a soft clay-colored mass. This yellowish gray-color pervaded the entire structure of the liver, which was rather softer than natural. I could discover no other morbid appearances.

Case 7th. Private Wm. George, æt. 18, 31st regt. on the 1st of September, 1826, was attacked at Tilbury Fort, with symptoms of high fever. He was actively treated, nevertheless, on the 5th, he became semi-comatose, his pulse being 110, and full. A blister was applied over the entire surface of his head. On the morning of the 6th, he was more sensible and collected, but symptoms of low fever set in, under which he sank on the 7th.

Sectio Cadaveris.

Head.—The brain was loaded with blood and a small quantity of serum was effused into the ventricles. Its substance was of natural firmness, but the cortical layer had a peculiar bluish gray color, which I think depended upon the quantity of venous blood it contained.

Thorax—Healthy.

Abdomen.—The liver, spleen, and portal system were in the same state as in the preceding case. The stomach had, on its mucous surface, some petechial spots. The other viscera were sound. The bladder was distended with urine.

Case 8th. Private James Doyle, æt. 25, of the 3d Foot, was attacked with symptoms of high fever on the 27th December, 1826, attended with urgent pectoral complaints. By the most rigorous treatment, these were relieved, and a rubeolous eruption appeared at the proper period. On the 6th day, this eruption disappeared, and the pectoral symptoms returned with increased violence. The most active measures were employed without effect, for the difficulty of breathing continued up to the period of dissolution.

Sectio Cadaveris.

Head.—Vessels of the brain were turgid.

Thorax.—Both lungs were studded with miliary and crude tubercles, some of which had advanced to suppuration; they were in the first stage of inflammation, save the root of the left where the second stage was observable. The bronchial membrane was inflamed.

Abdomen—Healthy.

Case 9th. Private John Kniper, æt. 18, of the 1st Foot, was attacked on the 8th February, 1827, with symptoms of high fever, his head being particularly affected. He was not admitted till the 13th, when he was actively treated. On the night of the 14th, the bandage which bound the arm in which he had been bled, gave way, and he lost a great deal of blood. Low symptoms set in, and notwithstanding the exhibition of powerful stimuli, he died on the 16th.

Sectio Cadaveris.

Head.—Brain surcharged with blood; each lateral ventricle contained about one ounce of fluid.

Thorax and *abdomen.*—Sound; but the stomach contained about a pint of dark green sordes.

Case 10*th.* Private Robert Brower, æt. 19, 3d Foot, was admitted on the 12th of February, 1827. A fortnight previously, he had been discharged the hospital, where he had been treated for a pectoral affection. Symptoms of high fever were now present, coupled with a return of his pectoral complaint. On the 15th, a rubeolous eruption appeared, which subsided on the 2d day. Up to this period, venesection had been freely performed, and cathartics as well as antimonials administered. After the disappearance of the eruption, warm bathing was had recourse to, but without effect. He became much debilitated, and his cough and difficulty of breathing were increased, but curious enough, the pain in his breast subsided. On the 20th, the pectoral affection was much aggravated, and low symptoms were established. His bowels were constipated. A gentle purgative was administered, blisters were applied to his breast, and stimulants employed, but without effect, for he died on the 23d, at 4 o'clock, P. M.

Sectio Cadaveris.

Head—Sound.

Thorax.—The right lung was pervious, but contained many granular tubercles. The upper lobe of the left lung was solidified, impervious, and of a redish gray color. When thrown into water, it sank. The inferior lobe was adherent to the thoracic parietes by a recent effusion, but it was sound in its texture, except near the surface.

Abdomen—The liver was enlarged, hard, and granular. The other viscera were healthy.

Case 11*th.* Private John Minahan, æt. 21, of the 63d Regt. was admitted 26th January, 1827, with symptoms of high fever, his chest being particularly affected. He was treated with great activity, and on the 4th of February, began to shew signs of convalescence. He however continued in a debilitated state, and on the morning of the 12th, low symptoms were established, and the integuments of his penis and scrotum were found in a state of incipient gangrene. Scarifications were made, poultices with the carb. ammon. applied, and bark, wine, and opium were administered, but without effect;

for in this prostrate state, his pectoral symptoms returned on the 20th; and wonderful to say, he did not sink until the 26th.

Sectio Cadaveris.

Head—No disease.

Thorax.—Right lung sound. Left adhered to the parietes of the chest, by a recent lymphatic exudation: its upper lobe was in the first stage of inflammation; it did not crepitate freely, was red, more firm than natural, and loaded with bloody serum: its middle lobe presented on the outer surface, an irregular, shapeless, brown, gangrenous patch, about one inch and a half in diameter, and when cut into, it appeared to extend irregularly for half an inch into the substance of the lung; the remainder of this lobe was in the third stage of inflammation—in a word, there were no traces of air cells, the tissue was firm, gray-coloured, and purulent matter issued from every point of its cut surface, and towards the inferior and outer part of this lobe, I discovered three small cavities one-half inch in diameter, with irregular parietes formed by the condensed tissue of the lung, and communicating with the bronchial tubes.

Abdomen—Healthy.

The integuments of the greater part of the penis and scrotum were destroyed by mortification, and two sinuses filled with pus, led from the root of the former, to the verge of the anus.

Case 12*th.* Private Jno. Kelly, who was confined in the Lunatic Hospital in consequence of confirmed mental alienation, was admitted into the medical division on the 8th April, 1828, with low fever, attended with yellowness of the skin. He had been ill a week before his admission. His bowels were constipated, his tongue and teeth covered with sordes, and he had hiccough and incessant vomiting of black tenaceous matter. Appropriate treatment was had recourse to; but the powers of life gradually declined until the 10th, when he died.

Sectio Cadaveris.

Head.—The dura mater was thicker, and more firmly connected with the cranium than natural; the arachnoid membrane was opaque, and a considerable quantity of turbid fluid lay beneath it. The membranes were of a yellowish color, and yellow streaks were observable in some parts of the brain; the small quantity of fluid contained in the ventricles of the brain, was yellow, and communicated the same tinge to linen.

Thorax—No disease.

Abdomen.—The liver was rather small and hard, and when cut into, its structure appeared dense, and of a bluish yellow color. The gall bladder was not distended, but its contents were of a dark green color, and thick consistence.

Case 13th. Private Christopher Horner, of the Third Veteran Battallion, who for four years had suffered from hemiplegia, and hepatic irritation, was admitted into hospital on the 18th June, 1826, with œdematous erysipelas of the face and head, accompanied with low fever, his head and lower intestines being particularly affected. Sulphate of quinine, opium, wine, and beef tea, were freely administered; the erysipelas subsided, but on the 20th, he died exhausted.

Sectio Cadaveris.

Head.—The scalp and cellular tissue of the face, were slightly thickened.

The arachnoid membrane was opaque, and raised by effused serum.

The brain seemed deficient in blood; but its consistence was natural. Each of the lateral ventricles contained about half an ounce of fluid, and their lining membrane was more firm than natural.

Thorax.—The heart was loaded with fat.

Abdomen.—The liver was much enlarged, yellow, and flaccid.—The mucous membrane of the large intestines was abraded and inflamed, throughout its entire extent. The rectum passed obliquely across the sacrum to the right sciatic notch, and then to the median line, thus forming a considerable curve, two inches above the anus, being in all its course firmly bound to the parts behind it, by the peritoneum.

Case 14th. Alice, wife of private William Lynch, on the 2d of July, 1826, was admitted with erysipelas, of the upper part of the neck and face, attended with symptoms of low fever, her head and cheeks being seriously affected; appropriate treatment was resorted to, but she died exhausted, on the 6th.

Sectio Cadaveris.

Head.—The superficial vessels of the brain were turgid, and slight serous effusion existed beneath the arachnoid membrane; the tissue of the brain was sound, but the lateral ventricles were half filled with fluid.

Neck.—On elevating the integuments, I found that the inflammation extended in all directions, passing down by the side of the larynx and pharynx, beneath the sterno-mastoid muscle, and from thence into the anterior mediastinum; the cellular tissue was sloughy in many points of the regions now mentioned, and pus was effused into its cells.

The lining membrane of the larynx and trachea was slightly inflamed; but they contained very little mucous.

Thorax.—The superfices of each lung exhibited many spots about half an inch in diameter, which had undergone the same change as the cellular tissue in the neck; when the right lung was divided, it presented three apoplectic cells in different stages of advancement, and the same state of parts, though in a minor degree, existed in the left lung. In the latter, I observed two tubercles of the size of a small nut, firm in texture, and surrounded by condensed and vascular pulmonary tissue.

Abdomen.—The Liver was of a clay color, soft, and adhesive, with partial obliteration of the acini; the gall bladder was of small size, and contained about half an ounce of vitiated bile.

Case 15th. Private Thos. Cowley, 1st Foot, on the 5th July, 1826, was attacked with fever and gastric irritation, on the 9th, a variolous eruption appeared, for which he was admitted into hospital. The pustules, which were of large size, and filled with whitish matter, became confluent. On the 14th, the pustules began to sink, and low fever set in, accompanied with hoarseness, and pectoral oppression; and continued to increase until the 17th, when he died.

Sectio Cadaveris.

Head.—No disease.

Larynx.—The lining membrane of this organ was in a state of high inflammation, and studded over with small pustules, which extended to the eighth ring of the trachea; between these the membrane was covered with lymph.

Oesophagus.—Sound.

Thorax.—Both lungs were engorged with blood, and the tracheal membrane was greatly inflamed.

Abdomen.—The liver bore marks of ancient disease. The stomach contained three masses of calcareous matter, equal in size to a hazel nut; its mucous membrane was vascular, thickened and pulpy. All the intestines were in a healthy state, save the termination of the colon, which was slightly inflamed, particularly towards the rectum.

Case 16th.—Private John McCallister, æt. 40, was admitted June, 1822, into the Lunatic Division of the General Hospital, on account of melancholia. On the 26th of August, 1826, he was attacked with symptoms of low fever, which advanced with surprising rapidity, coma set in, and he died on the night of the 29th.

Sectio Cadaveris.

Head.—Cranium very thick. Cerebral congestion with sub-arachnoid effusion.

Thorax.—Root of the lungs and heart loaded with blood.

Abdomen.—Liver small and of a dark blue color. The colon formed an angle towards the brim of the pelvis. The abdominal system of black blood was in a state of repletion.

Case 17*th.*—Private Martin Mooney, æt. 55, of the Newfoundland Corps, an orderly officer in the Lunatic Hospital, greatly addicted to drinking, was, on the morning of the 20th September, 1826, discovered lying in a trench near Fort Clarence, where, in a fit of intemperance, he had slept during the previous night. On examination, he was found laboring under symptoms of low fever; coma soon set in, and he died on the 6th. This unfortunate man had been complaining for a few days before the above-mentioned time.

Sectio Cadaveris.

Head.—The vessels of the brain were overloaded. A considerable quantity of serum was effused between the arachnoid membrane, and pia mater. The substance of the brain was exceedingly soft, and the lateral ventricles were distended with a watery liquid.

Thorax and abdomen.—No disease.

Case 18*th.*—Sarah, wife of Private Wm. Carey, of the 31st Regt. æt. 42, was attacked on the 20th August, 1826, with symptoms of low fever, her head being particularly affected. She lingered on until the 9th of September, when she died exhausted.

Sectio Cadaveris.

Head.—The brain was loaded with blood, its substance was rather firmer than natural, a small quantity of fluid was effused into the lateral ventricles, and the cortical substance possessed that leaden color, described in the case of William George, page 297.

Thorax.—The inferior lobe of the left lung was slightly hepatized. The heart was very soft, and gave way when roughly handled.

Abdomen.—Spleen and liver loaded with blood, softer than natural, and of a clay color, as in the case of Fanning, page 296. The branches of the porta were in a state of repletion.

Case 19*th.*—Private John Donovan, æt. 47, of the Newfoundland Corps, was attacked on the 25th August, 1826, with symptoms of low fever, his chest being particularly affected. He was admitted into hospital on the 3d September, on the evening of which day, he was attacked with severe catharsis. This was checked, but returned on the 7th, being accompanied with abdominal pain. The debility increased, and he died exhausted, at 12 o'clock, on the 9th inst.

Sectio Cadaveris.

Head.—Vessels of the brain, rather turgid.

Thorax.—Bronchial membrane inflamed.

Abdomen.—The liver had, on some former occasion, contracted adhesions with the diaphragm. The peritoneum was covered with lymph, and about a pint of serum, with flakes of lymph effused into the abdomen. The mucous membrane of the stomach, and small and large intestines were in a state of inflammation.

Case 20th.—Private Joseph Church, æt. 22, of the 5th Foot, on the 8th September, 1826, was attacked with febrile symptoms, which were subdued by bleeding, &c., but on the 10th, they returned, and assumed a low character. On the 13th, he was admitted into hospital. At this time, he had gastric pain, and relaxation of the bowels. From this period, he daily grew worse, and died on the 28th. It is worthy of notice, that he never shewed the slightest symptoms of delirium or coma.

Sectio Cadaveris.

Head.—The vessels of the brain were more turgid than natural, and in some places, serum was effused beneath the arachnoid membrane.

Thorax.—The bronchial membrane was slightly inflamed.

Abdomen.—The mucous membrane of the stomach was inflamed, and presented several petechiæ. The ilium exhibited the same appearance, and in addition, extensive ulcerations had taken place, by which the mucous membrane, had been in many places completely destroyed, together with its muscular tissue.

Case 21st.—Corporal John Cushin, æt 50, in February, 1826, was confined in the Lunatic Hospital. He enjoyed good health until the evening of the 1st of October, when he became indisposed. On the 2d, symptoms of low fever were apparent, with œdema of his face and feet. On the 3d, he was transferred to the Medical Hospital. After his admission, the œdema rapidly subsided, but the low symptoms advanced. During the night of the 4th, he had several severe rigors. On the morning of the 5th, his respiration was very laborious, and on the 6th, he died.

Sectio Cadaveris.

Head.—No disease.

Thorax.—The posterior and upper part of each lung was hepatized, and the bronchial membrane inflamed.

Abdomen.—No disease. The bladder was distended with urine.

Case 22d. Private John Hannon, æt. 21, of the 3d Foot, was admitted into hospital on the 17th August, 1826, in the following state. Pain in the head, great debility, quick languid pulse, hot dry skin, flushed face, brown furred tongue, teeth covered with sordes, and diarrhœa. He stated that he arrived the day before, from Ireland, that he had been affected with diarrhœa, and more or less fever, for some days; but he did not complain of his abdomen, even when pressure was made on it. The adynamic symptoms as well as the diarrhœa, continued, up to the time of his death, which took place on the 22d, at half past 4 o'clock. He had some delirium on the night of the 21st, but on the day of his death, he was perfectly rational.

Sectio Cadaveris.

Head and *Thorax.*—No disease.

Abdomen.—The liver and spleen were soft and flaccid. The ilium was extensively ulcerated, particularly near its termination in the cœcum. Between the ulcers, the mucous membrane was studded with many tubercles, composed of enlarged mucous follicles. Some of these buttons had small ulcers on their summits, and every stage, from the smallest tubercle to the largest ulcer, was clearly demonstrable. Similar productions existed in the commencement of the large intestines, but they had not advanced to any considerable size; these intestines were distended with flatus, and the arch of the colon, formed an angle towards the pelvis.

Case 23d. Mary, æt. 22, wife of Private Wilkinson, of the 31st Regt. was attacked with low fever on the 2d September, 1826. She had pain in the region of the stomach, and vomited a greenish colored fluid. Her dejections became liquid, black, and fœtid, which, together with the fever, and gastric irritation, increased, and continued up to the 13th, when she died.

Sectio Cadaveris.

Head.—Vessels of the brain turgid, cerebral structure firm.

Thorax.—No disease.

Abdomen.—Liver, spleen, and portal system in the same state as in Sarah Carey, page 302. The stomach and duodenum contained a considerable quantity of dark brown fluid, the mucous coat of both was highly inflamed, and several petechial spots were observable in the great extremity of the former. The gall bladder was distended with dark, thick bile.

Case 24th. Private John Havalesky, æt. 60, in consequence of mental alienation was received into the Lunatic Hospital in 1821, where he remained apparently in good health, until the 1st September, 1826, when he became affected with symptoms of low fever. His tongue was indicative of gastritis, his thirst was great, his dejections were fœtid and dark colored; but he had no pain in the abdomen. He perspired profusely; his debility became excessive, and he died on the 14th.

Sectio Cadaveris.

Head.—The cranium was thick, and adhered firmly to the dura mater. The brain was particularly firm.

Thorax.—The left lung was sound, with the exception of its upper lobe, which contained some crude tubercles. The right one was studded with crude tubercles, and the pulmonary tissue was hepatized.

Abdomen.—The mucous membrane of the stomach presented a petechial appearance; throughout, it was of a darker color, and more thick and pulpy than natural. The liver was hardened, its acini were enlarged, indurated, and of a yellow color, and its interstitial cellular tissue was condensed.

Case 25th. Private Daniel Lennon, æt. 28, of the 31st Regt. was seized on the 20th August, with remittent fever of a low type, attended with diarrhœa. In the beginning of September, his fever began to decline, but the affection of his bowels continued until the 22d when he died.

Sectio Cadaveris.

Head and *Thorax.*—No disease.

Abdomen.—Both the liver and spleen were slightly enlarged, of a grey color, and soft consistence. The stomach contained a brownish grumous fluid; its mucous membrane was thick and pulpy, but its color was natural. The mucous membrane of the small intestines was highly vascular, thickened and pulpy, while that of the large intestines was extensively ulcerated and thickened, particularly towards the rectum.

Case 26th. Private Alexander Gilfinin, æt. 22, of the first Foot, was attacked on the 21st October, 1826, with febrile symptoms, and diarrhœa, attended with abdominal pain and gastric irritation. He was admitted into hospital on the 24th, soon after which, the symptoms assumed a very low character, and the dejections became dark and fœtid. No amendment took place until the 9th of November, when his tongue became moist, and tolerably clean, his bowels more regular, and his pulse moderate; but on the 11th, he complained of great pain in his back, and debility, which rapidly increased, until 5 o'clock, P. M., on the 12th, when he died.

Sectio Cadaveris.

Head and *Thorax*—No disease.

Abdomen.—The mucous membrane of the lower portion of the ilium was thickened, highly vascular, and in many places superficially ulcerated. The mucous tunic of the ascending portion of the colon, bore marks of incipient inflammation, but presented no traces of ulceration.

Case 27th.—Private John McCalister, æt 40, an inmate of the Lunatic Hospital, was admitted into the Medical Division, on the 4th December, 1826, with symptoms of low fever, attended with pain in the chest and abdomen; his symptoms increased until the 12th, when he died.

Sectio Cadaveris.

Head.—The arachnoid membrane was opaque, and a yellow serous fluid was effused beneath it. The substance of the brain was more dense than natural.

Thorax.—The back part of both lungs was hepatized, particularly that of the right.

Abdomen.—The peritoneum was inflamed, and the intestines were connected by a recent lymphatic exudation.

Case 28th. Private Richard Davis, æt. 21, of the 45th Regt., was admitted into Hospital on the 28th October, 1826, laboring under fever, attended with cough; but without pain of breast. The low character of the disease was soon confirmed, and terminated his existence on the 14th December.

Sectio Cadaveris.

Head.—Slight turgescence of the cerebral vessels.

Thorax.—Hepatization of the posterior part of both lungs.

Abdomen.—The ilium was inflamed, and studded, particularly towards its termination, with enlarged and ulcerated follicles, as in Hannon's case, page 304.

Case 29th. Private Owen Early, æt. 20, of the 3d Foot, was admitted into Hospital on the 7th December, 1826, with symptoms of low fever, abdominal pain and purging. These symptoms increased up to the period of his death, which took place on the 30th.

Sectio Cadaveris.

Head.—The vessels of the brain were turgid.

Thorax.—No disease.

Abdomen.—The ilium was in the same state as in the last mentioned case.

Case 30th. Mary, wife of Private Goold, æt. 30, was admitted into Hospital on the 25th of January, 1827, with symptoms of low fever, under which she sunk on the 31st.

Sectio Cadaveris.

Head.—No disease.
Thorax.—No disease.
Abdomen.—Liver much enlarged, soft and granular. Mucous membrane of the stomach and small intestines slightly inflamed.

Case 31st. Private Simon Handcock, æt. 20, of the 28th Regt., was admitted on the 23d of September, 1827, with symptoms of rather a low character; they increased, and on the 28th he complained of severe pain in the occiput; on the 29th he became delirious, then comatose, and in a few hours the coma gave place to muttering delirium, which continued until the morning of the 30th, when he expired.

Sectio Cadaveris.

Head.—Cerebral vessels turgid; substance of the brain rather soft.
Thorax.—No disease.
Abdomen.—Liver soft and clay colored. Spleen soft and like coagulated blood. Large intestines studded with numerous small ulcers.

Case 32d. Private Daniel Hayden, æt. 30, of the 28th Regt., was admitted on the 19th of September, 1827, with low fever and relaxed bowels. In a few days delirium set in, and he passed his stools involuntarily; from this period he gradually sunk, and died on the 3d of October.

Sectio Cadaveris.

Head.—Cranium marked deeply by vessels. Dura mater highly vascular. Cortical substance of the brain of a leaden color; (see case 7th, page 297.) medullary almost pulpy.
Thorax.—No disease.
Abdomen.—Liver hard, granular, and clay colored. Spleen reduced to a state of complete mollescence.

Case 33d. Private John Atkins, æt. 27, of the 33d Regt., was admitted into Hospital on the 22d of September, 1826, with symptoms of remittent fever; but on the 26th his disease assumed a continued character. His head was particularly affected, and he complained of pain in the right hypochondrium. The cerebral affection continued, and increased, coupled with great debility. On the 3d of October, he was semi-comatose, in which state he continued until the 9th, when he became insensible, and so remained until the 13th, when he died.

Sectio Cadaveris.

Head.—Vessels of the brain; surcharged with blood; cortical substance of a leaden color. (see page)

Thorax.—No disease. A few old adhesions existed between the posterior part of either lung and the wall of the chest.

Abdomen..—Liver condensed, engorged with blood, and of a clay color; (see page) gall bladder contained two ounces of thick bile. Spleen so soft, that when its capsule was removed, it spread itself widely on the table.

CASE OF PNEUMONIA, BY ROBERT COLEY, M.D.

W. H. æt. 34, by trade a carpenter, applied to me, on the 6th of May last, at 4 o'clock, P. M., in consequence of a violent and sudden attack of pneumonia. He stated, that for some months past, he had labored under intermittent fever, and, upon the preceding evening, at the approach of a chill, had purchased a dose of ipecacuanha, in the supposition that it would ward off the attack; the effect of this medicine was exceedingly violent, and after much straining, when the stomach was completely cleared of its contents, he perceived a slight watery discharge, was stained with blood, and was for the first time conscious of a pain in the chest. From the symptoms which prevailed at the time of my visit; I could hardly regard the excessive emesis he described, as a sufficient cause for their occurrence, and, upon further questioning, I gained information sufficient to account for even more than I had observed. I learned that on the night before he complained of sickness, he had not only indulged in intemperance, but had actually passed the night in the street, during a continued fall of rain. This statement enabled me to trace the mischief occasioned, to its source, and to draw correct conclusions both as to the cause of the chill on the evening of the 5th, and the effects of a violent emetic upon a system already suffering under congestion. He complained of an acute pain, generally in the thoracic region, but particularly in its right portion, referring to one spot about the middle and close, to the sternum, as the chief seat of suffering; he had a dry and constant cough, but in the intervals discharged a viscid sputa greatly tinged with blood, which in some instances appeared to form the larger portion of the expectoration: the inspiration was short and difficult, and when forced, caused the most severe pain; he could not lie on his right side; his pulse was strong and quick, ranging from 96 to 100; his skin hot, his eyes blood-shot and heavy; and he was evidently oppressed in spirits, and alarmed at the unusual sensations he was experiencing. On examining the chest by percussion, the sound was dull over the whole thorax, but more particularly so on the right side, and in the situation where he described the greatest pain, exceedingly obscure; the application of the stethoscope fully confirmed my impressions of the nature of the case. I could scarcely distinguish the respiratory murmur on the right side, while on the left, it was more audible, and in the former situation, a slight crepitating râle was distinctly heard. I immediately bled him to the extent of 24 ounces, and as the bowels had not been relieved within the last 48 hours, directed the use of the Senna mixture, an ounce every two hours, with a grain of tartarized antimony, until its effects should be completely answered.

In the evening visit, every symptom was exasperated, the respiration more hurried, the pulse increased in quickness and force, the cough almost incessant, with a copious expectoration of bloody sputa; the sound on percussion struck my ear as more obscure than before, and on the right side, the respiratory murmur was completely lost. The medicine had, after two doses, freely evacuated the bowels.

V. S. repr. a. ℥ xxx.
℞. Antimonii Tartarizat. gr. vj.
Syrupi Scillæ ʒ ij.
Aq: Distill. ℥ vj. Pro mistura, cochlearia duo, secundis horis.

7th. 8 *o'clock, A. M.*—He had passed a sleepless night, and was exceedingly restless and anxious; the cough was considerably subdued, and the discharge of blood by the sputa lessened; the pulse small, but quick, the tongue furred, and the teeth covered with a brown sanies; the eyes dull and heavy, the complexion sallow, and the features somewhat shrunk; the whole expression forcibly reminding me of the appearances remarked in typhus. Percussion continued obscure, and the crepitating râle was still more distinct than before on the right side, and slightly recognised on the left. Although aware that a portion of the right lung was hepatized, and that engorgement to a considerable extent prevailed in the left, I did not venture upon general bleeding under the circumstances: the bowels had been relieved, but the medicine had produced neither sickness nor diaphoresis.

Hirudines xvj. pectori, et postea cataplasma vesicat. applicand.
℞. Antim. Tartar. gr. xij.
Aquæ ℥ vj. capiat ut ante.

9 *o'clock, P. M.*—The pulse had risen surprisingly, the cough again very troublesome, and the eyes had lost their heavy appearance, and were continually moving to different objects; the surface of the body hot, and the head oppressed with a throbbing pain. The situation of the patient being thus materially altered since the morning, I again bled him, and on sixteen ounces of blood being withdrawn, the pulse sunk both in force and frequency.

Repr. Mistura ut ante.

8*th.* 11 *o'clock, A. M.*—A decided amendment was apparent this morning; the respiration was much easier; the sputa scarcely tinged, but still viscid; the sound on percussion continued dull, but I imagined a slight return of the respiratory murmur in the right lung; in the left it was distinct; the skin still continued hot; the pain remaining near the sternum. I applied another blister exactly over the spot, and continued the medicine as before. He had now taken upwards of 40 grains of tartarized antimony in less than the same number of hours; no sickness or even nausea was produced; as yet the heat of skin was undiminished, and the bowels were only moderately evacuated.

9 *o'clock, P. M.*—The heat of the skin still continued, but nearly all the other symptoms were greatly alleviated; the pain in the neighborhood of the sternum is no longer perceived, and the respiration is comparatively easy. A great desire for sleep was manifested, as from the time of seizure scarcely an hour's uninterrupted rest had been obtained.

℞. Misturæ Camphor. ℥ iss.
Liq. Ammoniæ Acetatis ℥ ss.
Vini Antimonii.
Tinct. Opii aa guttas xl. Fiat Haustus.

10*th.* 9 *o'clock, A. M.*—A sound night's rest had been enjoyed, and my patient awoke better in every respect; on percussion, the sound was decidedly clearer, and on applying the stethoscope, the respiratory murmur was evidently mixed with the crepitating râle; he could turn with tolerable ease on his right side; the cough had disappeared, and his principal ground of complaint was simply the soreness occasioned by the blisters The skin, although dry, had lost much of its heat, and altogether, the patient, though exceedingly weak and languid, was calm and free from uneasiness.

Cont. Mistura Antim. Tartar.

7 *o'clock, P. M.*—The amendment continued, and the skin was at length moistened by perspiration; the bowels had been freely acted upon in the course of the day: the respiration perfectly easy, and the murmur very distinct; the sound on percussion clearer than in the morning. At his own earnest request, I repeated the narcotic and diaphoretic draught of last evening.

11*th.* 12 *o'clock, A. M.*—The night had been passed tranquilly, with the exception of the slight annoyance occasioned by excessive perspiration; the crepitating râle was scarcely heard, while the respiratory murmur had returned in its full force; the sound on percussion nearly as clear as in a state of health. A slight degree of nausea was experienced for the first time, which towards evening was increased to sickness. I now discontinued the use of tartarized antimony, and was content with ordering the repetition of the diaphoretic draught at bed-time.

A nourishing diet was commenced this day, by allowing him a little chicken broth; during the previous days he had been confined to gruel and barley water, and the quantity he used of such food was exceedingly small.

11*th*, 12*th*, *and* 13*th*.—Gradually approaching to convalescence, which was only interrupted on the 12th by a pain in the bowels and nausea, both easily removed by a saline aperient; the sound on percussion became perfectly clear, and also the respiratory murmur, on auscultation, without the slightest mixture of the crepitating râle.

14*th*.—Convalescent.

I regard this case as illustrating two great principles in the treatment of pneumonia; first, the necessity of a careful and frequent use of the stethoscope, as the surest means both of prognosis and diagnosis, and secondly, the efficacy of tartarized antimony. With respect to the stethoscope in this case, I would ask by what other means could the exact situation of the lungs be ascertained in pneumonia? how clearly did it show the stages of engorgement and hepatization, how absolutely direct the treatment that could alone have been successful, and how happily did it display the returning power of the respiratory apparatus.

As to tartar emetic, I am aware that I did not exhibit it in such doses as I have seen recommended by some practitioners, nor am I inclined to introduce into the stomach a corrosive mineral poison, without exercising the utmost caution. In the numerous cases of pneumonia that I have witnessed, I have never seen much advantage attend the extravagant use of this salt; it must ever be considered, that when the system is so much oppressed as in pneumonia, the powers of the stomach become greatly weakened, and consequently the effects of tartarized antimony, either as a nauseating or an emetic remedy, are very feeble, and less to be depended upon to secure such results than in promoting diaphoresis. I cannot dismiss from my mind the apprehension that so large a dose as sixty grains, or even a much less quantity, might prove most disastrous; the system is sometimes too inert to obey the remedy, and thus a virulent and corrosive poison is allowed to remain in the stomach, opposed to its delicate mucous membrane, and with what probable consequences may be readily imagined. The dose of two grains every other hour is, I am persuaded, amply sufficient in the majority of cases, where venesection has been promptly and freely practised. The lancet, after all, is our sheet anchor in pneumonia, and after its employment, the steady exhibition of tartarized antimony will generally effect the intended purpose. It will be seen in this case, that so long as the lung remained in a state of hepatization, little or no effect was produced by the antimony, but directly a change was accomplished, and the affected portion of the organ became in a state of simple sanguineous infiltration, preparatory to a more favorable alteration, the medicine acted first upon the pulse, then upon the skin, and lastly upon the stomach.

It may be necessary to add that the patient was a large heavy man, and of rather irregular habits; his trade, that of a master-carpenter, had not interfered with his general health, which, with the exception of an attack of intermittent, had been uniformly good.

GLEANINGS FROM FOREIGN JOURNALS.

On the nature, source, and distribution of the nervous fluid, or electricity of the animal system; and of the connexion between the mind and the body, and of vital temperature. By CHARLES SEARLE, Esq., *Surgeon, and of the Hon. E. I. Company's Madras Medical Establishment.*[*]

As the functions of the nervous fluid are "to excite the muscles, to convey impressions to and from the sensorium, to effect the formation of the secreted fluids, and to cause an evolution of caloric from the blood"—and as all these purposes are to be accomplished by galvanism, taken in consideration with the fact, that certain animals are known to generate electricity so abundantly that they possess it as a weapon of offence, and the recent experiments of Dr. Berandi, of Milan, who has proved that needles, thrust through the crural nerves of living animals, become, during the time, electric, and subsequently, on removal, magnetic—a fair deduction, arising out of such a combination of evidence, would appear to me to establish the identity of the nervous with the electric fluid. At least, such is the impression upon my mind, and, as such, warrants me, I am of opinion, in assuming it as a fact, which I shall therefore do. I proceed therefore to offer an explanation of its source, which, with that of its distribution, I trust will prove not undeserving of attention, as I am humbly of opinion it will be found satisfactorily to explain many of the phenomena of vital action, both in health and disease, clouded at present in complete obscurity. I may first observe, that it is no secretion of the brain, or spinal marrow, as evinced by the facts, that fœtuses have been born alive without either of these organs, and that animals will live for hours from which both have been removed; and that it is no secretion of the nerves, their structure would lead us fairly to infer, had we not the more complete evidence in the fact, that there are even animals so low in the scale of creation as to be without them. The nerves, therefore, are, it is fair to suppose, but its conductors; and the brain, with its appendage the spinal marrow, its central point and recipient, preparatory to its distribution. Such, I conceive, is a fair inference, and such I am of opinion, the evidence I shall adduce will be sufficient to establish as being the fact,

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[*] Read before the Westminster Medical Society, April 16th, 1831.

For the elucidation of the subject I must beg to be permitted to introduce a few preparatory considerations on respiration and assimilation. Murray says—"the blood is the source whence the animal products are formed; its expenditure is supplied by the chyle, a fluid less completely animalized than the blood itself. The peculiar character of animal matter, with regard to composition, is, a larger proportion of nitrogen, and a diminished proportion of carbon; it may therefore be inferred, that in the extreme vessels, where the animal solids and fluids are formed, the general process will be, the separation from the blood of those elements of which animal matter is composed, and that of course carbon, which enters more sparingly into its composition, will exist in the remaining blood in an increased proportion. This is accordingly the general nature of the conversion of arterial into venous blood. Nitrogen, hydrogen, and other elements, are spent in the formation of new products, and the proximate principles of the blood, probably the crassamentum chiefly remain with an increased proportion of carbon."

The chemical changes in the blood, therefore, obviously take place in the arterial capillaries throughout the system, and the blood's exposure to the air in the lungs is but subservient to them, accomplishing the extrication of the carbon in chemical union with the previously-absorbed oxygen, and which as carbonic acid gas is replaced by a fresh portion of oxygen, that now becomes absorbed, while the latter, in its combination with carbon, in the general circulation, is attended with an evolution of heat, in consequence of the diminished capacity of the product for caloric, as the following quotation, extracted also from Rees's Cyclopedia, will render apparent:—

"These results (alluding to a former paragraph, proving the higher specific temperature of arterial over venous blood, which was computed as 114 to 100) derive confirmation from the experiments of Mr. Colman, who, in order to discover the relative specific heat of arterial to venal blood, strangled a cat, and immediately opened its chest, while the blood in the left ventricle was still fluid. He then introduced a thermometer, through an opening in the pericardium, on each side of the heart, and it stood at 98 deg.; in the left ventricle the blood was only 97 deg.; and in the right, it was nearly 99 deg. In 15 minutes, however, instead of the blood in the right ventricle possessing two degrees of heat more than the left, it was found to have four degrees less. Sir Astley Cooper repeated this experiment in various ways, and found invariably, that although the venal blood was superior in temperature at first, yet before coagulation was complete, the arterial became from three to six degrees warmer. These facts afford clear and decisive proof, that the specific heat of arterial blood exceeds that of the venal; and demonstrates likewise, that this excess is obtained during the passage of the blood through the lungs."

Such then being the source, or principally so, of animal temperature, I shall now proceed in my design to show the source of the electric fluid.

It is an established fact in chemistry, that the decomposition of a compound, or the formation of a new one, is attended with a variation in the electrical capacities of the products—the change manifesting an increase or diminution in this respect, it becoming either plus or minus, latent or evolved.* Now, as the process of accretion, assimilation, and secretion, constituting the change or conversion of arterial into venous blood, so well explained by Mr. Murray in the foregoing quotation, is a chemical process, and as this change, moreover, is attended with the combination of the oxygen with the carbon, of the carbonic acid formed, and as experiment has proved such combination of oxygen, or combustion of carbon, to be attended with an evolution of positive electricity, I may fairly assume the chemical change, or conversion of arterial into venous blood, at the termination of every arterial ramification throughout the system, is not only attended with an evolution of caloric, but of electricity also. Hence from the first, the body's temperature, and its equal diffusion; and from the second, its nervous or electrical excitement, or vitality,—the former of which, or its caloric, being abstracted by the surrounding media from the superfices of the body, or in conjunction with the perspirable and bronchial secretions, is exhaled in the form of vapour from the skin and lungs. The latter, or electrical evolution, which I believe to be in a ratio with the calorific and chemical change that has taken place, having its source in the capillary circulation, explains the reason why vitality goes on in these vessels for a considerable time after the apparent death of an animal, and the irritability of muscular fibre, after the appearances more particularly denoting life have long ceased. And it explains also the reason why the arteries, after death, are found empty; arterial blood being the stimulus to action, and support of capillary circulation, as long as this is furnished, capillary action continues, which necessarily empties the arteries of their contents.

Another argument that may be adduced, favoring this view of the body's electrical generation, is the fact, that a capillary tube is quite impervious to a fluid, but under the excitement of electricity admits its passage freely. Now, as the capillary vessels are so minute that they are not discernible by the naked eye, but with a microscope the blood's free passage is to be seen through them, we are warranted in supposing, that the circulation in these vessels may be excited by the same means; as it has been proved by experiment, that it is no impulse of the heart, nor action of the arteries, that carries on the circulation in these vessels, as it still goes on long after the heart has been removed from the body, and the action of the arteries ceases. And further, it has been proved, by removing both brain and spinal marrow, that the excitement of these vessels is not derived from the brain and nerves. The only essential to their action I believe to be the due oxygenation of the blood, as this is not only essential to the abstraction of a deleterious principle from the blood, but to the chemical changes connected with the evolution of both caloric and electricity, the indispensable stimuli to all vital phenomena, and which I believe the oxygen alone furnishes. This, I am of opinion, is made manifest in the incubation of the egg, oxygenated air, and a certain temperature, being the only essentials to the process; and also, in the developement of the fœtus in utero, the mother imparting only oxygenated blood, which alone possesses all the materials of its structure and vitality. Many other arguments might be adduced in support of the same views, but I shall content myself at present with adding, that the experiments of Dr. Philip proved, that capillary circulation was dependent on respiration (admitting as he does, that the laws which regulate the power of the vessels of circulation are the same with those which regulate that of the heart,) inasmuch as the action of the heart ceases on respiration being discontinued, and is restored by its restoration. This appears to me to admit of no other explanation, and I should say is confirmed by the experiments of Dr. Berandi, who found the developement of electricity by the nerves to bear reference to the perfection of the respiratory process, and to be increased by the inhalation of oxygen gas; and on the contrary, to be suspended when the animal was made to respire hydrogen or azote. It may be asked, for what then are the capillaries so amply furnished with nerves? I should reply, to determine their action or direct their innutrition, secretion, &c., which being organic, or vital functions, are supplied by the sympathetic.

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*A striking illustration of which at once presents itself in the galvanic trough.

The explanation offered appears to me as complete and satisfactory as can well be desired; and as much so, perhaps, as the case admits of, leaving hardly a doubt on the mind of the origin of the nervous or electrical fluid of the animal being such as I have suggested.

The electricity thus generated, I am further of opinion, is transmitted by the most perfect conductors of the animal textures—the nerves, to their source, in the common acceptation of the word, and its receptacle—the spinal marrow and brain, exciting the sensorium to the various operations of the mind, and the organs of sense to their respective functions, and is again transmitted by the nerves, at the pleasure of volition, in the several actions of muscular contraction, or is conveyed by the pneumo-gastric and respiratory nerves to the respective organs and functions to which they communicate excitement, and hence the intimate connexion and remarkable sympathy existing between the head and stomach or liver, and an explanation why mental emotions, or great muscular exertion, so immediately derange digestion, and the functions of the several organs to which these nerves are transmitted, by withdrawing from the stomach and these several organs that stream of excitement which is necessary to the secretive and digestive processes.

Of the hybernation of animals, too, these views offer a very satisfactory explanation, as well as some other of the phenomena of vitality, which I shall mention. The atmospheric temperature, by the withdrawing of the sun's influence, being reduced below that degree which is compatible with the perfect action of the cutaneous and pulmonary capillaries, their function, in the extrication of carbon and absorption of oxygen, is but imperfectly effected, and, by consequence, the chemical changes connected with the evolution of caloric and electricity are so much diminished, that the quantity of these generated are not equal to the excitement of the respiratory muscles and organs of sense, and hence the cessation of their action, and the profound sleep which ensues. But as the temperature of these animals, by their timely withdrawing into holes and comparatively warm situations, is not reduced below that state which is compatible with a certain degree of respiratory action being carried on by the cutaneous surface, organic or vegetable life still continues. Hence Spallanzani found, that torpid animals, where respiration had entirely ceased. carbonated the air in which they were confined. And in this state of vegetable existence or torpidity they remain, till the genial warmth of spring restores the respiratory office of the lungs, and with it animal life. This is analogically well illustrated in the vegetable kingdom, the warmth of spring expanding the sap, relaxing the cutaneous or barky surface, and thus favoring atmospheric absorption and the chemical processes of vegetable life; and with it secretion, and the budding and developement of the leaf or lungs, under the influence of which, the more complex actions of impregnation and fruition ensue, differing but little from animal reproduction. *And* conversely thus it is with the fœtus in utero, like unto the hybernating animal; defectively oxygenated blood, for so it must be circulating in the fœtus, secluded from aerial influence, and renewing but a portion of its blood by an interchange with its mother, is productive only of that quantity of electricity necessary to its developement and vegetable existence, and still compatible with the non-performance of the respiratory action, and numerous functions of animal life. And thus it is when its developement and growth are complete, and by consequence the quantity of electricity generated more than equals the necessities of its condition, excitement is communicated to its containing organ and uterus, and hence is its expulsion effected, and respiratory action immediately follows.

It will be noticed, that I attach to the nerves the twofold office of being the conductors of electricity from its source in the capillary circulation, and of conveying it to the muscles of volition and organs of secretion. That they fulfil both these offices I think there can be no doubt, since Mr. Charles Bell has demonstrated, that each nerve proceeding from the spine consists of a bundle of fibres enclosed in the same common sheath—some, I would add, proceeding from and others to, the spine,—one set, it has been proved by Messrs. Bell and Magendie, originating in the posterior roots being connected with sensation, and the other with the anterior portion of the spine, and with motion. The branches connected with the posterior roots I would therefore denominate the converging fibres, or conveyancers of the electric fluid and impressions from their source to the spine and brain, and those of the anterior, the diverging being charged with electricity from the spine and brain, to carry volition into operation in the excitement of muscular contraction.

If such be the case, it next becomes a question how the action of the involuntary muscles is effected. These, it will be remembered, receive their nervous excitement from the sympathetic. This nerve, contrary to all other nerves of the body, has no particular origin, but is formed, I should say, by the filaments given off by every nerve of sensation, whether proceeding from the spine or the brain, and with which it holds communication through the intervention of a ganglion, the office of which may be to cut off or prevent the communication of sensation to the vital organs, or as a knot of interruption, by which the wants of the sympathetic are first provided. Hence the organs to which the sympathetic is distributed, being in function primary in the scale of animal existence to the brain and spinal marrow, will be the first to receive electrical excitement, and the last to lose it, as long as the fluid is generated, and transmitted from all and any part of the capillary system; and thus it is, after the apparent death of an animal, the senses having fled, and the powers of volition ceased, that the peristaltic motion of the stomach and intestines still continues for a considerable time, and the capillary circulation to some extent long after this has failed.

In support of these views I shall make a few extracts from Dr. Philip's "Enquiry into the Laws of the Vital Functions," and offer some remarks upon the deductions he arrives at, from his numerous and well-conducted experiments. 1st. He proved "that the capillary vessels possess a power capable of supporting a certain motion of the blood independent of the heart, by the following experiments:—a ligature was thrown round the vessels attached to the heart of a frog, and the heart was then cut out; on bringing the web of one of the legs before the microscope, the circulation was found in it to be vigorous, and continued so for many minutes, gradually becoming more languid." The like experiment was tried upon a rabbit, and "the blood was found to be moving freely in the capillary vessels of the mesentery an hour and a quarter after the heart had been removed," and Dr. Philip adds, "that he has no doubt the same action continues for several hours, as this was noticed in a rabbit which had been thrown aside with its bowels hanging out from an opening into the parietes of the abdomen, and exposed to the air, by which it was quite cold."

2d. He proved that "the power, both of the heart and vessels of circulation, is independent of the brain and spinal marrow," by numerous experiments. The following may be adduced as, in every respect, satisfactory: "The brain and spinal marrow of a frog were removed at the same time; on opening the thorax, the heart was found performing the circulation freely." "The spinal marrow of a rabbit was laid bare from the occiput to the beginning of the dorsal vertebræ, the circulation being supported by artificial respiration. The chest was then opened, and the heart found beating regularly and with considerable force; the spinal marrow, as far as it was laid bare, was now removed, without in the least affecting the heart's action; after this, the artificial respiration being frequently discontinued, the action of the heart was repeatedly seen to become languid, and increase on renewing it. The skull was then opened, and the whole of the brain removed, but without any abatement of the action of the heart, which still continued to be more or less powerful, according as we discontinued or renewed artificial respiration; this being for a considerable time discontinued, the ventricles ceased to beat about half an hour after the removal of the brain; but on renewing respiration, the action of the ventricles was restored, the respiration was again discontinued, and renewed with the same effects." In another experiment, "A strong ligature was thrown round the neck of a frog, and the head was cut off without any loss of blood (much loss of blood immediately destroys the circulation of the extremities); the spinal marrow was then destroyed. On bringing the web of one of the hind legs before the microscope, we found the circulation in it vigorous for many minutes, and in all respects resembling that in the web of a healthy frog."

Dr. Philip, in concluding these experiments, observes, "Does it not seem a necessary inference, that the action of the heart and vessels of circulation, depends upon a power inherent in themselves, and having no direct dependence on the nervous system? It assuredly does; and does not my explanation of these phenomena afford a satisfactory solution of these points, viz., that the action of vitality commences in the capillary arteries, under the excitement of the blood, and that the heart's irritability is dependent on the same cause, viz., its structural capillary circulation, and its excitement as a muscular organ, derived from the sympathetic—as a collector of electricity from all quarters; aided though, no doubt, by the stimulus of the blood, and its warmth on its internal surface, and the irritation of distension: it is, however, a question in my mind, if this latter is not attributable to the influence and excitement that it imparts to its structural circulation, as a moment's reflection will point out to us, that the distension of the aorta would appear essential to the coronaries of the heart being duly furnished with blood. It is probable, I am also of opinion, that the heart's action may be excited to a certain extent by the electricity of its own generation, and the same probably obtains with the other organs of involuntary muscular action; as these organs have no conducting nerves, or such as we have so denominated, which abstract this influence from other parts of the system. Hence it is, that the heart of cold-blooded animals will continue to beat for hours after removal from the body. Why this only takes place in cold-blooded animals, I conceive fairly attributable to difference of temperature, every class of animal having its own specific heat, and which is essential to the maintenance of its vital actions; and perhaps, too, in this class of animals, as a less stimulus of temperature is necessary to muscular action, so may be a less degree of nervous or electrical excitement.

3d. Dr. Philip subsequently proved, that the action both of the heart and capillaries is to be influenced through the medium of the brain and spinal marrow: for instance, "alcohol applied either to the brain or spinal marrow, accelerates their action, and tobacco debilitates them." I shall not adduce any experiments in proof of these points, as there can be no difficulty in conceiving this to be the case, when we reflect upon the formation of the sympathetic nerve, from twigs holding communication with these organs, as well as the connexion maintained between them, through the medium of the eighth pair; and the same may be said of the peristaltic motion of the stomach and intestines, which he proved also "to be independent in their action of the brain and spinal marrow, but, like the heart, to be influenced through the medium of these organs."

The following experiments of Dr. Philip favor the opinion, that electricity is the cause of nervous excitement, and that the brain is its receptacle. By dividing both of the eighth pair of nerves which descend from the brain, and thus cutting off the supply of electricity, the secretive and digestive processes of the stomach were arrested; but these processes he completely restored, by furnishing the stomach with a supply of the galvanic fluid along the divided nerves. Further he proved, that "the secreting power of the stomach is almost as much deranged by destroying a considerable part of the spinal marrow, as by dividing the eighth pair of nerves." This is another strong argument in favor of my views: it does so, by depriving the organ of that quantity of electricity which would otherwise be transmitted from the brain, and obtained through the medium of the spinal marrow from the collecting nerves; in short, depriving the brain of its principal source of supply. The functions of the involuntary muscles, it will be remembered, as proved by a former experiment, in this case are not affected, as they derive their excitement from the sympathetic, which still holds its connexion with the collecting nerves; this tends to corroborate my opinion as to the origin and office of the sympathetic, as well as of the function of the collecting nerves.

Dr. Philip goes on to observe, as legitimate deductions from his numerous experiments, that the ganglions (meaning those of the sympathetic) are a secondary centre of nervous influence, whose nerves are as extensively distributed as those which proceed from the brain and spinal marrow; that the ganglions are the means by which the influence of these organs is bestowed on the parts which we have found influenced by every part of these organs, viz., the organs independent of volition; in all which I fully agree with Dr. Philip, excepting the ganglions' generation of this principle, which I believe he means to imply.

Dr. Philip further observes, that "the excitement of the organs of involuntary motion in all their usual functions, appears to be rendered independent of the nervous influence" (of course he here means that imparted by the brain and spinal marrow,) "because their functions require a more uniform excitement than could have been derived from this source." Let me remark, how well does my explanation provide these organs with an equal and constant supply, rendering these, too, the first to receive electrical excitement, and the last to lose it, as long as it is generated in all and every part of the capillary system.

Dr. Philip adds, "We have reason to believe the nervous influence is the galvanic fluid, collected by the brain and spinal marrow, and sent along the nerves; it being not only of all artificial means of exciting the muscles that which seems best adapted to the purpose, but capable both of forming the secreted fluids, and causing an evolution of caloric from the blood, after the nervous influence is withdrawn.

"The nervous power is not more distinct from the muscular than it is from the sensorial power, as we find the first capable of all its functions after the last is withdrawn.

"The only functions essential to animal life, in which the sensorial power is concerned, is respiration; and consequently it is by the interruption of this function (that is, the excitement imparted through the medium of the respiratory nerves and eighth pair,) that the removal of the sensorial power proves fatal, except where the sensorium is so impressed as immediately to destroy all the functions," which was the case, when Dr. Philip suddenly smashed the whole of the brain of a rabbit, and which, probably, by withdrawing or annihilating the fund which is immediately essential to the continuance of the respiratory and vital functions, is analogous in effect to a stroke of lightning; the latter operating, I presume, in the following way:—this larger charge of electricity being positive to the body's small quantity, and relative negative state, completely annihilates it, to the extinction of all the functions; hence it is, that from the cessation of the capillary circulation, the muscles in such cases are found to have immediately lost their irritability, and that blood is discovered in the arterial, as well as in the venous system. "The sensorial power appears to be the last which is produced, and the first whose operation ceases." This becomes a necessary deduction from my argument, of its source being in the organic capillary system.

I shall conclude the subject by offering a few remarks on the functions of the brain. As a whole, I am of opinion it may be considered as the receptaculum commune of the electric or nervous fluid, which it receives through the medium, principally, of the spinal marrow, from the numerous collecting nerves of the body. An objection may be urged against the brain's having the power to retain so unconfinable an agent as electricity; this objection, however, cannot apply farther than in relation to other parts of the system. Now the conducting and comparatively retaining power of substances out of the body are manifold; and as the nerves, I believe, have been found to be the best conductors amongst the textures constituting the animal fabric; and as the medullary fibre of the brain is of the same nervous character, there can be no difficulty in conceiving the thing. Consider, also, the membranes in which it is enveloped, and that the dura-mater forms a sheath to the spinal canal, and to every nerve proceeding therefrom; may it not insulate these fibres from adjacent connexions; and does not this opinion receive support from the fact, that no nerves have yet been traced to enter into the composition of its texture, so different in this respect from all others? No doubt the air and surrounding media gradually abstract it from us, and that it escapes from the system in conjunction with the perspirable and other secretions; hence when any of the more important secretions are suppressed, there is so much irritation and restlessness experienced. Let it be also observed, that it is only for a temporary purpose I suppose it possesses this power of retention, not supposing there is at any time a large accumulation, for the demands on the fund are so manifold, particularly in the excitement of the respiratory muscles, and the secretive and digestive processes,* which are constantly in action, that the expenditure, I conceive, at most times equals the supply. Its being otherwise probably may be the cause in some cases of madness, the mental organ being in consequence over-excited; hence it is that examination of the brain in such cases after death so frequently presents no lesion of structure. Or where the stomach is kept in a state of constant excitement by full diet and tit-bits, that the mental organ is not duly excited, making good the passage in Shakspeare, that,

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* I would almost venture the opinion that there is a regular circulation of the electric fluid in the animal system, analogous to the circulation of the blood. Electricity being evolved in the capillary system during the conversion of arterial into venous blood, and proceeding along the collective fibres of the nerves, it communicates in its passage to the spinal marrow and brain, what is required to the twigs given off and forming the roots of the sympathetic, for the excitement of the vessels of circulation and involuntary organs, or vital functions; the surplus proceeding along the spinal marrow, communicates, during the period of being awake, excitement through the medium of the med. oblong. to both cerebrum and cerebellum, or sensorium, in all its functions, mental as well as animal; and thence proceeding is transmitted by the pneumo-gastric and respiratory nerves for the excitement of the respiratory and assimilating processes; in the latter instance, re-entering into combination with the alimentary material, it is re-evolved in the nutritive and formative functions of the capillary system. Digestion, I presume, therefore, to be effected in the following way. Electricity being transmitted to the stomach by the par vagum, not only acts upon, but I believe enters into combination with the alimentary material, and thus is its digestion and animalization effected. This appears to me a much more reasonable explanation of the process of digestion than the opinion generally entertained of its being simply the effect of the solvent and assimilating qualities of

> "Fat paunches have lean pates;
> While dainty bits make rich the ribs,
> They banter out the wits."

And that idiotism may be dependent on some defect in the communication of excitement, to the intellectual portion of this organ; and cretinism to the same, though secondarily induced, as a consequence of defective supply, resulting from the respiration of malaria, or a very rare and attenuated atmosphere.

The brain also, in a restricted sense of the word, I concur in considering with Gall and Spurzheim, as the organ of the mind; but I am not prepared to say any thing of their division of it into parts as numerous as there are faculties. But speaking of the brain in the aggragate, that is of the whole substance within the cranium, I would assign to different portions different purposes. The cerebum surmounting the medulla oblongata consists of numerous convolutions united to the central fibrous medullary structure, in a manner analogous to the intestines on the periphery of the mesentery, and is the organ (speaking of it as a whole) the functions of which are intellectual. The medulla oblongata, meaning thereby all the inferior part of the cerebrum, and from which the nerves of sense arise, is the organ appropriated to receive the impressions of the senses, and which it communicates to the mind by the blending of its nervous fibres with those of the cerebral organ, in the medullary portion of the latter. It is very clear that the senses are united in function, as they are only thus conjointly under the power of volition. As a proof, I cannot will to see, without both hearing and smelling; nor have I the power to arrest the function of either singly, but the whole

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the gastric secretion; which I believe to have been found to have but little effect in accomplishing such active solvent purposes out of the system. Whereas, the experiments of Dr. Philip unequivocally prove that galvanism, however it may operate, is capable of effecting digestion, or that something of the kind is indispensable to the process. The opinion generally entertained on this head is, that it accomplishes digestion by the secretion it gives rise to; whereas I am of opinion this is but a concomitant circumstance, possibly, however, aiding the process by permeating and softening the textures of some substances, and dissolving others; the essential agent being the electricity itself. From the muculent and apparently inert character of the gastric secretion, it may be inferred, if my explanation be admitted, that it serves little other purpose than protecting the coats of the stomach from injury in the process, or none beyond what has been mentioned.

I can, simultaneously, by going to sleep; and thus it is that the muscular nerves of the organs of sense arise also from the medulla, as they are united in effect; and hence also it is that the medulla oblongata is formed by the crura cerebri et cerebelli, or at least that they enter very largely into its composition, thus blending the animal functions, or voluntary, with the mental in this organ, as it is conducive to the functions of both, and they are conjointly in operation.

The state of being awake, or alive to all the impressions of sense, I am of opinion, is that in which the current of electricity passes through, or is extended to the medulla oblongata, and thus are the senses and all the functions in a state of excitement; whereas in sleep, the stream of electricity takes a different course, or perhaps wholly passes off by the pneumo-gastric and respiratory nerves, which, it will be remembered, arise from the inferior part of the medulla; or perhaps I might more properly say, the summit of the spinal marrow; hence it is, that digestion and the secretive processes are much more active during the state of sleep; and that dreams, we may infer, are occasioned by the excitement of the intellectual organ, the before-mentioned nerves not withdrawing a quantity of electricity equal to the supply; and thus is it also difficult to sleep with an empty stomach, and the reverse of this, how great the propensity to sleep after a full meal. Finally, the spinal marrow, appended to and surmounted by the cerebellum, are organs appropriated to volition, and the numerous functions more particularly characterising animal existence; to the excitement of which, accompanied with that of the cerebral organ, during sleep, or unaccompanied with the excitement of the medulla oblongata, may somnambulism be attributed.

In conclusion, it may be observed, that the scale of animal life comprises three conditions of existence. First, the organic, or that going on in the capillary system, or structure analogous; this bordering on vegetable life; and the latter on chemical affinity, rendering the last the bond of union between organic and inanimate nature. Secondly, the nervous and sensient, dependent on the first, or the more particularly animal; connected with organs of sense and volition.—The third and last, surmounting the whole,—the intellectual; on the summit of which man stands proudly pre-eminent, with a brain or cerebral organ developed in a ratio with his vast comprehension and superiority of mind above the rest of the creation; and holding communion with an immortal spirit, in a way inconceivable to the limited number of faculties with which it has been the pleasure of the Almighty to endow him.—(*London Lancet.*)

Observations on the motions and sounds of the heart. By David C. Nagle, *M.B., &c., Trinity College, Dublin.*

Engaged as the medical profession has latterly been in the consideration and discussion of the physiology of the heart's actions, and the pathology of its diseases, any circumstances relating to that important class of functions and lesions, will scarcely be uninteresting to some members of that profession. It will, therefore, perhaps be pardonable in me to lay before them such particulars of the following case as bear directly on cardiac disease, accompanied by some observations on the new theory of the motions and sounds of the heart.

Case.

Catharine Langan, aged 32, and married for 14 years, was affected with cough, dyspnœa, and palpitations of the heart, and, occasionally with copious hæmoptysis. These symptoms commenced before her marriage, and recurred frequently, with more or less severity until the period of her coming under my observation. At that time, three months previous to her death, the pain in the region of the heart was extremely acute, the palpitations very violent, and the other symptoms much aggravated. Percussion elicited a dull sound over a large extent in the region of the heart, the actions of which could be heard all over the anterior part of the chest from the clavicles to the margin of the false ribs, especially on the left side. These were so rapid, tumultuous, and disorderly, as to preclude the possibility of any analysis until the remedies, usual for the alleviation of such symptoms, were employed. The heart's impulse was remarkably strong on the right and left of the sternum. The pulse, however, in the radial and other arteries was scarcely perceptible! No regular rhythm was, at any time, discoverable in the heart's movements. A number, six or eight perhaps, of comparatively weak and confused impulses followed each other in rapid succession, after which usually came about three,—strong, rather regular, and admitting of an appreciable interval between them. The ear felt not then an alternation of soft and rigid impulses, as it did immediately before! The arterial pulse became, evidently, more regular and a little increased in strength during these few beats, but was by no means in proportion to the intensity of the impulse against the chest, with which it was, unquestionably, synchronous, and invariably exhibited the regularities and irregularities of the latter phenomenon. It was hard, wiry, and rapid. When the heart relieved itself, as it were, by these two or three comparatively slow and tranquil motions, then, and only then, a loud bellows-sound was audible between the ensiform cartilage and the margins of the eighth and ninth false ribs of the left side. This soufflet did not extend to the right side, but was traceable on the left to the extent of a few inches laterally from the sternum, and up to about the third rib, approaching which, it exhibited an increased intensity. Repeated observations left no doubt of its being perfectly synchronous with the impulse against the chest and the pulsations in the different arteries examined; and, what is important to observe, that it was substituted for the first of the two cardiac sounds. The contraction of the ventricles was attended with a loud dull sound on the right, with the bellows sound on the left of the sternum.

Diagnosis.

From these and other particulars, less important and omitted for the sake of brevity, the following diagnosis was formed respecting the heart:—"Hypertrophy with dilatation of both ventricles, extending, in all probability, to the auricles. *Certainly*, an obstruction at the *aortic orifice* occasioned either by disease of the valves or contraction of the aperture." Having been asked by Dr. Clinton, who frequently visited with me this patient, and to whom I mentioned my diagnosis, if I considered the auriculo-ventricular orifices obstructed, I replied that "there was no phenomenon to warrant even the suspicion of their being so; and that the result of a post-mortem examination would strongly confirm the reasonableness of my objections to the new doctrine respecting the heart's impulse against the chest;"—objections which he knew me to have repeatedly urged previous to the publication of Dr. Hope's papers. The patient, affected with general anasarca, dropsy, hydrothorax, &c., was admitted on the 4th of February last into Sir P. Dunn's Hospital, where she died in a day or two after. For the following description of the post-mortem appearances of the heart I am indebted to two very intelligent gentlemen, Dr. Nalty and Mr. Sharkey.

Autopsy.

Between the pericardium and heart there were no adhesions, nor any lymph effused; the pericardium contained about six ounces of fluid. The heart was enormously enlarged, the auricles and ventricles being exceedingly dilated and hypertophied, but the hypertrophy in any did not appear proportioned to the dilatation. The hypertrophy and dilatation of both auricles were in proportion to those of the ventricles. The increased thickness seemed to extend to all the valves, which closed, perfectly, their respective apertures. *All* the orifices, except the aortic one, were not only quite free, but appeared to participate in the dilatation of the cavities. The *aortic aperture* was *very much* contracted, and its valves considerably more thickened than any of the others, which indeed were thought by some to be in a natural state, but adapted to their respective openings.

Remarks.

If in this case I had formed my diagnosis in accordance with the principles on which the new theory is sought to be established, it is evident that I *must* decidedly have fallen into error. For, to a supposed obstruction at the auriculo-ventricular aperture I should then have attributed the bellows-sound, occurring as it did, synchronously with the impulse against the chest. But I think there will be found only few to deny that here, where all the other orifices were perfectly free, it was owing to the contraction at the mouth of the aorta impeding the free egress of the blood, and thus not only producing the marked feebleness of the pulse, but, by the re-action it generated, stimulating the ventricle into energetic and repeated efforts for the more ready expulsion of its increasing and embarrassing contents. I confess I cannot possibly bring myself to subscribe to the doctrine of those who would persuade themselves and others, that bruit de soufflet is owing to the passage of the blood "through a narrow opening into a *wider* cavity." The present case is directly opposed to such a supposition—the writings of the very best authors supply us with innumerable instances subversive of the opinion; and through the pages of this valuable Journal will be found many more in the instructive lectures of the judicious Dr. Elliotson. But to the following fact I am induced to attach more value than to any number of experiments made with tubes *out* of the living body.

A friend of mine, Mr. J. O. C., of Clonmel, had, when a boy, a penknife thrust into the femoral artery just below Poupart's ligament. After an excessive loss of blood, the wound closed without any surgical operation. Having gone to the medical profession before I commenced its study, and wishing to give me an idea of the velocity of the blood's motion through the arteries, he had me to lay my finger on the wounded spot, which felt indurated and thickened. There was not the slightest appearance of aneurism; but *above* the wounded part a loud bruit de soufflet was distinctly perceptible by the naked ear, even at some distance. On the application of the finger to the part, the sound was much increased, and at the same time was felt a peculiar rustling, the fremissement cataire of authors. Not the slightest vestige of either phenomenon could be detected any-where *below* the thickened spot. There, all was tranquil and noiseless. Independent of this fact, we know that, by pressing on an artery, a bruit de soufflet can be produced, and may be *distinctly* heard *at* or *above* the point of obstruction, but not *below* it. Besides, their principle will not account for the soufflet heard during pregnancy. From these facts I feel warranted in more than doubting, that bruit de soufflet, even when it occurs in the heart, is owing to the "rush of blood through a narrow opening into a *wider* cavity," and detected only in the latter.

Had we not, in support of the old theory respecting the impulse against the chest, the authority of men so accurate in their diagnostics as were Bertin, Laennec, Andral, and others, the correctness of the conclusion deduced in the above case would strongly sanction the validity of the data on which the diagnosis was founded, in opposition to the new and certainly ingeniously supported doctrine. But to that doctrine, from the period of its first promulgation, I have been opposed on what I conceive very strong and tenable grounds.

The most important point to be considered is,—to which is the impulse against the chest owing—the contraction of the ventricle or auricle? For my own part, I am strongly impressed with the belief, that it is solely attributable to the contraction of the ventricle. The advocates of the new theory say, "We consider the examination of the heart of the frog as quite conclusive." I shall shortly come to the consideration of the motions observable in the heart of that reptile; and expect to show from what is there presented to the eye, that they should have come to a conclusion directly the reverse of what they deduced, and attribute the impulse against the side, to the *incipient* action of the ventricle in its systole. Let us previously examine the question by the aid of one sense only:—When the index finger of the left hand is applied to the temporal or subclavian artery, and that of the right to the part of the chest against which the heart is felt to beat, few will be those who may deny the perfect synchronism of the two impulses. In my own person and those of others, though I have been examining the circumstance with considerable minuteness for the last three years, I never detected the slightest deviation from the most exact synchronism, except when the tibial artery was the one examined. Nay, more, I have found, that if in an instance the impulse at the chest happened to be increased or undergo any other variety, there invariably occurred a corresponding increase of energy, or variety, in the arterial pulse—a fact I should like to see legitimately accounted for according to the principles of the new theory, which attributes the impulse at the chest to the rush of blood from the auricle into the ventricle.

To investigate the question more fully and securely, let us now call in the assistance of more than one sense; and we know from experience and the authority of Locke, that we may more safely rely on the correctness of the conclusions we deduce, when "our senses bear witness to the truth of each other's report concerning the existence of sensible things without us." If, then, in the silence of night, the ear be so covered or pressed, that the pulsations in the arteries about it may be rendered evident to our sense of hearing, and the finger be laid on the part where the heart's pulsations are most clearly felt, I venture to affirm, that the commencement of the pulsation in the arteries, as *heard* by the ear, will be found perfectly synchronous with the pulsation as *felt* by the finger. So critically do they they coincide, that the observer will find it impossible to determine which is first. To carry a little further this method of investigation, let us inquire what aid may be derived from obstetric auscultation. It will not be denied, that the commencement of the soufflet heard during pregnancy, is invariably synchronous with the pulse in the radial artery. Is it synchronous with the impulse at the chest? The candor and judgment of the advocates of the new theory, after they shall have made an accurate and dispassionate examination of the fact, will induce them to concede that I am justified by the phenomena observable in every case, when I assert, that it is invariably synchronous with the heart's impulse; consequently the latter *must* be occasioned by the contraction of, *not* the auricle, but the ventricle.

The individual being in the recumbent posture, inclining a *little* to the left, or, in the sitting position, forward and to the left, let a stethoscrope be applied on the right iliac fossa, and the fingers of the left hand over the cardiac region, so as to feel distinctly the impulse against the chest; it will then be observed. that the very moment the impulse is felt by the finger, the *commencement* of each uterine soufflet bursts distinctly and forcibly on the ear. In this mode of investigation, the two phenomena will be found so palpable, and unequivocally synchronous, that the most sceptical is left no opportunity for cavilling, particularly when the uterine murmurs are not continuous; for then the incipient state of each is easily ascertained by even an ear unaccustomed to minute auscultatory observation. In corroboration of the result arrived at by this mode of procedure, let the cylinder be applied to the region of the heart, and another be procured of such construction, that the cardiac extremity resting on the left iliac fossa, the auricular portion may reach the disengaged ear of the observer; then will the beginning of each uterine soufflet be found to coincide, not only with the impulse against the chest, but with the *commencement* of the *first* of the two cardiac sounds! To this important fact, I would beg leave to solicit the particular attention of the experimenter. In THE LANCET, No. 384, p. 501, I had, for a different purpose, to show that the action of the mother's heart is sometimes heard at the hypogastric region. In the case alluded to, the pulsation, or rather resonance, which coincided with the impulse at the chest, occurred simultaneously with the commencement of each uterine soufflet. Cases of this kind are of frequent occurrence, and afford peculiar facilities for the settlement of the question under consideration.

These facts it will not be easy for those to controvert who would still advocate the validity of the new doctrine; but to the following one I would, in my anxiety that we should, in this important question, arrive at some legitimate and satisfactory conclusion, solicit the earnest attention of such as take an interest in the physiology of the heart's actions. Frequently have I observed, that in states of nervousness or restlessness, a peculiar and lengthened intermission would, at times, occur in my own pulse. The palm of the hand being applied on such occasions to the region of the heart, this organ was distinctly felt to swell with a gradual, equable, and unimpulsive motion to the very parietes of the chest. Then, after an appreciable pause in this dilated or swollen state, would an unusually strong impulse be rapidly communicated to the side of the chest. At the same instant the suspended beat in the radial artery would take place with increased energy; and, indeed, in the arteries about the neck and head, a distressing shock would be felt at the very moment of the heart's impulse! Was the pause merely an exaggeration of what, according to Laennec, naturally occurs after each contraction of the auricle? Or was it occasioned by the resistance which the parietes of the chest gave to any further perceptible dilatation in the ventricle? This interesting fact was well calculated to confirm me in the belief, that the impulse at the chest is owing to the systole of the ventricle. Many, I dare say, can verify in their own persons what I am now stating; at least I have sometimes, for the sake of experiment, succeeded, by a forced inspiration, in bringing on such sort of action in the heart. The diastolic motion takes place so gradually, and the pause of what I conceive the maximum of dilatation is so well marked, that, in general, I have time, before the systole commences, to apply the finger to the radial artery to ascertain the synchronism of the arterial beat, and the impulse at the chest.

Before I proceed to the consideration of the frog's heart, the reader will, perhaps, permit me to trouble him with some observations on that of the horse. In the latter animals, when healthy and unheated by exercise, the heart's beats vary from about 28 to 35 in a minute, affording, by this slowness, an admirable opportunity for *correct* stethoscopic observation. When the cylinder is being applied to the sternum behind the leg, a very considerable interval is found to elapse between each two consecutive impulses, which are exceedingly well marked in some horses. If the finger be then applied to the artery just above the knee, the observer, unless his sense of touch and experience in auscultation are very defective indeed, will not for a moment question the synchronism of the arterial beat and the impulse against the chest. Moreover he will find, that the two sounds of the heart, as also the rhythm, are most satisfactorily clear. The first sound is loud and distinct, flatter and much longer than the second; the second is clear, more feeble, and, as it would seem, more distant from the ear. The first occurs simultaneously with the heart's impulse. I hope to show that it coincides with the arterial pulse also, and is, therefore, occasioned by the systole of the ventricle; and, by inference, that *this* systole is the cause of the heart's impulse at the chest!

The supporters of the opposite sides of the question are agreed in this,—that the impulse at the chest and the first sound are synchronous. Let us, for argument's sake, suppose the first sound to last in the horse for six seconds, and to be divided into three equal parts. It will be observed, that in some horses the *rising* of the arterial pulse is coincident with the *first* part; in others with the *commencement* of the second; but in none, though I have examined a great many, did I ever find it occur so late as the third. Now those who assert that the first sound is occasioned by the contraction of the *auricle*, must admit, that in either of the two first cases, the facts and arguments are against them; for, according to *their* principle, the arterial pulse should not commence till after the termination of the *third* part. The first sound, then, and the arterial pulse, are synchronous. But the first sound and impulse at the chest are also synchronous. Consequently the impulse at the chest, and the arterial pulse, occur at the same time, and, therefore, it is no unfair deduction to conclude, that the impulse at the chest is occasioned by the contraction of the ventricle.

Let us now proceed to the consideration of the heart in a frog; and the great importance which has been attached to the appearances there observed, will be a sufficient justification for any minuteness of detail into which I may find it necessary to go. When the animal is properly secured, and the outer integument removed, the observer will obtain, through the muscular parietes, a view of the heart's upward and downward motions. Let the finger be then applied over the heart, so as to get a clear idea of the rapid and rigid impulse given it by that organ. It can be perceived that this impulse is communicated when the heart has attained to its maximum of upward motion towards the throat. We shall afterwards see to what contraction this impulse is to be attributed. The heart being now cautiously exposed, a careful and minute inspection will detect the following particulars, to which I would request the attention of each unprejudiced inquirer, as confirmatory of my *opinion*, that the heart's impulse is solely attributable to the contraction of the ventricle.

In this animal, a frog, the auricle, during its systole, descends, with a rapid motion, beneath the ventricle. This, dilating with considerable quickness, ascends at the same time forward and upward towards the throat, exhibiting a deeply-purple hue. Its anterior surface is rendered slightly convex and elevated to the sternum, and its apex is increased in circumference at the moment of dilatation, and presses downward and *backward!* When the ventricle, in its dilatation, has attained its maximum of upward and forward motion, then instantaneously does its systole commence with an indescribable velocity, and, at the same moment, is observed its *incipient* exsanguineous appearance; the longitudinal and transverse diameters are shortened, the base and apex approximating to each other. From the very instant of the commencing contraction to its termination, transverse rugæ appear on the anterior surface, which sinks from the sternum whilst the ventricle contracts; the apex, during the contraction, decreases in circumference, and, if it does not come forward, ceases at least to *press* in the opposite direction. It is very important to observe, that it takes a considerable time to complete fully the contraction, though its commencement is so rapid. The auricle contracts, whilst the ventricle dilates; the ventricle contracts while the auricle dilates; therefore the time of rest enjoyed by auricle and ventricle seems to be during their dilatation only. Here we must recollect that some think (and very correctly, perhaps,) that these parts are merely passive during their diastole. The termination of the ventricle's dilatation is clearly indicated by the commencing purple hue, and the total and instantaneous evanescence of the rugæ on its surface. This is a point deserving particular attention, in order to have a clear conception of the very moment at which the ventricle's systole and diastole commence, as manifestly indicated by the appearance and disappearance of these rugæ. Such are the phenomena that would present themselves to a superficial observer, and would, in part, certainly countenance the new theory. But let us examine the facts with a more inquisitive eye.

By a superficial glance at the ventricle during its dilatation, I confess the impression made upon my mind was unfavorable to the views I had formed respecting the impulse at the chest; but on closer inspection I saw that the motion evidently was equable, and perfectly *unimpulsive!* When the dilatation had attained its maximum, and the extreme verge of the ventricle's base had arrived at the highest point of its upward motion, then, and only then, *a rapid jerk, or tilting forward,* was evidently perceived, particularly in the left angle of the base, and upper part, of the ventricle. To a good eye this interesting and very important fact is quite manifest, and is clearly owing to the *incipient* systole of the ventricle, as indicated by the commencing exsanguineous hue, the re-appearance of the rugæ, &c., but more especially by the simultaneous pulsation, and also by the rush of blood in the cardiac extremity of the aorta, as I shall take leave to call it. To render this impulse still more unequivocal, let a fine needle, inserted into a small and flat bit of sealing-wax, be so placed on the ventricle, that the edge of the wax shall not pass over the upper verge of the base. Then, during the diastole of the ventricle, the needle rises with the unimpulsive motion already alluded to; but at the moment the systole commences, the jerk, or tilting forward, is most satisfactorily and unequivocally indicated by the peculiar movement, and increased elevation, of the needle's point. Again, let the eye of the observer be so placed, that the point of the needle and the cardiac extremity of the aorta may be brought into a line; or, whilst the eye is fixed on the aorta, let the finger, or a slip of paper, be held closely over the needle's point; then will the jerk given the needle be found to occur simultaneously with the pulsation in the aorta, as indicated to the sense of sight, touch, and hearing. If the needle be next passed through the anterior wall of the auricle closely to the ventricle, and laid across the sternum, the auricle will be prevented from descending beneath the ventricle. Its contraction rapidly takes place above the needle, and then, after an appreciable interval, occur, simultaneously, the systole and tilting forward of the ventricle. The pause, which in this experiment I found to occur after the contraction of the auricle, is far from invalidating the order of rhythm as laid down by Laennec. It will be observed, that the projection in the wall of the ventricle is best marked in its upper two-thirds. Again; if the finger be applied to the ventricle, there is not communicated to it, during the diastole, the least sense of impulse or rigidity until the systole begins, when both, as felt before the heart was exposed, are instantly and clearly discerned. To one of my medical friends, Mr. Burges, I pointed out this jerk of the ventricle, and he expressed himself as quite assured not only of its occurrence, but also of its perfect synchronism with the pulsation in the aorta, though I did not confirm his belief by the test of the needle, which was one of those that suggested themselves to me in some further experiments.

If in a heart so small and so constructed as that we have been just examining, such a well-marked impulse is produced by the commencing ventricular systole, how distinct and energetic must it be in the human heart, owing to the strength of its muscular parietes, and the effort it must exert to propel its contents, particularly when it has to labor against a re-action, as in the case at the commencement of this paper! I conceive it is unnecessary to have recourse to the laws of mechanics or hydraulics to account for the impulse at the chest. Let us but consider some of the laws that regulate muscular contraction in general. Shall we be in error by supposing them to apply to that of the heart also? The ventricle—if we may reason from analogy and from what, as I stated, was experienced in my own person—is, in its dilatation, elongated, and gently elevated to the parietes of the chest; then, its systole commencing, the longitudinal diameter rapidly begins to shorten, and of course the muscle acquires in thickness what it loses in length. Therefore, by such a swelling, an impulse *must* be exerted upward and outward against the wall of the chest, as well as inward on the contained and incompressible fluid, part of which, propelled by the very first effort exerted on it, produces the arterial pulse. The ventricle, in order to complete the full and necessary emission of the vital stream, uninterruptedly follows up its first impression by contracting, in all directions, towards the centre of its cavity; thus, the anterior surface sinks from the parietes of the chest, and exhibits a more horizontal appearance. How beautifully is this continued effort exhibited in the heart of the frog, by the interval between the commencement and the perfect termination of the ventricle's contraction!

Among the positions advocated by the authors of the new theory is the following:—"The impulse against the side is caused by the contraction of the auricles, being dependent on the force with which the auricles send their blood into the ventricles." I shall produce instances of violent palpitations being felt, where, from the state of the auricles, they could not be reasonably supposed to exert a force adequate to the production of such beatings. But granting their position to be correct, let us examine the following assertion:—" The impulse against the side is not felt until the heart" (ventricle ?) " has been almost *fully* dilated; of course, until the auricle has *nearly finished* its contraction." It will be conceded, that an effect is in proportion to the force exerted. Now then, is it reasonable to suppose, that the strong impulses at the chest are the effect of an auricle's force, which is already nearly expended, and its contraction *nearly* finished ? Surely the expiring effort of the auricle is not the strongest part of its contraction. Yet they say the impulse is produced only at the *termination* of the contraction, or " when the heart has been almost *fully* dilated ;" attributing, I suspect, to the auricle's last weak effort, what should be ascribed to the *commencement* of the ventricle's systole. This opinion receives strong confirmation from the tilting forward in the ventricle of the frog's heart at its commencing systole. An important fact is this, though it seems to have been totally unobserved by some others ! " The beat of the heart," say they, " is produced in consequence of the impulse given by the rush of blood from the auricle." Let us suppose the ventricle to receive sixteen drachms of blood from the auricle, and that the auriculo-ventricular orifice is much contracted, or even perfectly free. Now, according to them, the impulse should not be generated, except by the last half drachm or drachm of blood, that is, " until the auricle has *nearly* finished its contraction." How improbable it is, that the very last portion of the blood should possess a *magic* power denied to the main body of that fluid, which had previously dilated to *nearly* its *full* extent the receiving ventricle ! Here it is important to bear in mind, that they are rather favorable to the opinion, that the ventricle is passive in its dilatation. Consequently it could of itself exert no force for the production of the impulse ; and its power should be limited to what it receives from the fainting effort of the auricle, or the feebly approaching last half drachm of blood !

In the case adduced from Bertin, in support of their tenents, I confess, I cannot see that " vis consequentiæ" by which would be borne down all opposition to their doctrine. Surely it does not follow as a necessary consequence, that the ventricle, because it happened to be in a state of ramollissement, was incapable of producing an impulse at the chest. It is not difficult to show that it must have acted with considerable energy. What was the state of the pulse ? It was " full, free, and vibrating," although the aortic valves were partly cartilaginous. Does this prove the ventricle incapable of acting ? Assuredly the reverse. The left ventricle was enormously dilated, and its walls were thickened at the inferior part and point. The inter-ventricular septum was more than an *inch* thick through its whole extent." These parts were softened, it is true. That does not prove them incompetent to discharge their functions; for we know from the writings of Haller, Corvisart, Vicq. d'Azyr, and others, that muscles converted into even a perfectly *fatty* substance, are still capable of contracting and performing their functions. Even the heart itself, we are informed by Corvisart, has been found by some anatomists reduced to this fatty condition; yet it must have discharged its office; and we are well aware that a vital organ like the heart, when reduced to a state of weakness and greatly diseased condition, is obliged to exert unusual force to carry on the functions necessary for the maintenance of life. But there is extant the most respectable authority in proof that a heart, even when softened, is still capable of producing palpitations and violent beatings. Laennec says, page 610, edit. 2d, by Forbes, "It has moreover appeared to me, that softening of the heart contributes much to render the contractions of the ventricles slower. Sometimes, however, in attacks of palpitation, a heart in this state, and which habitually gave only a slight shock and a very dull sound, all at once will resume *great* energy, and for *several* days continue to give those sharp, short contractions, which have been compared to the blows of a mallet." Forbes, in a note at page 613, says, "Preternatural softness of the heart is a state frequently met with on dissection. In a case lately under my care there were, among other symptoms, *strong* action of the *heart*, *strong* and rapid pulse! The only diseased appearance that could be found after death, was this *softening* of the muscular substance of the heart." Here, I think, is proof, to demonstration, that a strong impulse is *not* incompatible with a softened condition of the heart's substance.

It is argued, that in Bertin's case, where the ventricle was softened, the beatings *must* be owing to the auricle, because it happened to be a little hypertrophied! But I could adduce many cases in which there were violent beatings, though the auricles were not only *not* hypertrophied, but, on the contrary, in such a state of atrophy, as to be inadequate to the production of such beatings, if they depend on the hypertrophy of the auricles, or "the rush of blood from them into the ventricles." In commenting on Laennec's signs of hypertrophy, the advocates of the new theory very candidly say, "But the strong impulse, if it were invariably present, would be an objection to our view; for unless the auricles were at the same time *hypertrophied*, *our* explanation would *not* account for it." Let us see, then, if the following cases from Corvisart are favorable to their views. In case 14, that of the baker, "the patient had *frequent* palpitations and *violent* beatings of the heart." Autopsy; "the auricles had lost a portion of their *original* size, and looked *shrivelled!*" The right *ventricle* was dilated; "but the left was still much more enlarged, and its parietes were so much increased, that in *very many* places they were more than an *inch* in thickness! Case 31, of the washerwoman, the disease commenced with palpitations; these palpitations continued and "were *frequent*; the pulse was quick, rather weak, and irregular."—Autopsy. "Heart not much enlarged. The *auricles* were not enlarged, but their parietes were so *weak*, that in many places they were *transparent*, and tore with the *greatest* ease in separating them circularly from the base of the ventricles. The right ventricle was in a natural state; but the left, on the contrary, resisted pressure with so much force and elasticity, that its parietes immediately returned to the state in which they were before they were compressed. The substance of this ventricle was so firm, that it preserved almost a cylindrical shape. A part of this, forming the septum, projected into the right ventricle, the cavity of which it, in a great degree, occupied. Its fleshy parietes were *fifteen* lines thick!" We can easily account for the disproportion between the arterial pulse and the beatings of the heart, from these words of Corvisart, "The case is the most complete and extraordinary within my knowledge, of the contractions caused by the alteration of the semilunar valves, which by their arrangement nearly closed up the area of the mouth of the aorta."

The unprejudiced and reflecting reader will, I am satisfied, assign to these two cases their appropriate value, and mark how directly opposed they are to the views of the supporters of the new theory. They are sufficient also to warrant us in withholding our assent to the correctness of the following assertion:—"The impulse at the chest is caused by the contraction of the auricles being dependent on the *force* with which the *auricles* send their blood into the ventricles." Such auricles as those described by Corvisart, were, indeed, very ill-calculated for the exertion of much "force;" yet there were the most violent palpitations and beatings of the heart!

It is asserted that "the beat of the heart is produced, not by the tilting up of the point of the organ as hitherto described, but by its swelling and *coming against the ribs*, in consequence of the impulse given by the rush of blood from the auricle." Here I must take leave to say, that in all the experiments I made on the frog's heart, the point of the organ, though swelling, did not come forward during its dilatation; but, on the contrary, it pressed *backward*. This is rendered quite manifest, by gently raising the apex with a probe pressed under, and a little above it, then it will be found to turn under the probe, actually hooking round it; but at the very instant of the commencing systole, the apex is observed to turn slightly upward, ceasing to bend round the instrument. This I found to be so invariably the case in the frog, and other small animals, that I am convinced my statement can be easily confirmed by every accurate experimenter.

I have already shown that pathology will be found opposed to the new doctrine; but I may be allowed to adduce one instance more:—By the expression "*rush* of blood," we get the idea of a considerable quantity passing in a body, and rapidly into the ventricles. Now we frequently have the most violent beatings of the heart where this cannot reasonably be supposed to take place, as in the interesting case of heart disease given by Dr. Clinton in the last series of the Dublin Medical Transactions. "The patient had frequent palpitations, sometimes so violent as to shake the whole bed." According to the new doctrine, these were produced by the "rush of blood" into the ventricle. Let us consider whether the auriculo-ventricular opening could permit such a rush of blood. "The mitral valves were so much ossified, that the passage from the left auricle into the left ventricle was reduced to a *mére chink*, of a form somewhat semicircular, large enough to admit the blade of an ordinary scalpel, but *not* so large as to admit the *handle!*" Notwithstanding this obstruction, the case has been considered by some in this city as quite in favor of the new, and decidedly opposed to the old, doctrine. But that the converse is really the fact, I am strongly disposed to believe. Surely we are not warranted in considering it quite favorable to the new views, merely because the auricles happened to be hypertrophied, but the ventricles in a natural state. I have adduced instances of the most violent palpitations and beatings, where the auricles were in an extreme degree of atrophy. It is evident they can be produced even when the auricles and ventricles are in a perfectly natural condition. Such will be the effect of violent exercise, or moral causes; of nervousness, exhaustion, and particularly an obstruction at the mouth of the aorta. The last cause we find to have existed in the case just alluded to; and as the pathological fact is very interesting and accurately detailed, I beg to refer the reader to the original.

That the auricles and ventricles are merely passive during their dilatation, I am scarcely wrong in suspecting. The inspection of a frog's heart, when it is most energetic, would warrant no other conclusion; for we cannot possibly observe any other time for the muscle's rest, though the heart's actions are performed with such remarkable slowness. Moreover, when the heart had lost nearly all its blood, I found that, by pouring on it a little cold water, it became quite flaccid after the termination of each contraction of the ventricle; its sides spread out and sunk, as it were, into repose. After remaining in this condition until the moment for again contracting, the ventricle suddenly sprang into action, and immediately again relapsed into its indolent and sunken state. When the heart was removed, the same phenomena nearly were observed; the contraction only could be discerned. To come, then, to any other than the above conclusion, is difficult; particularly when we reflect on the rapid movements of the human heart, especially when the system is laboring under an inflammatory condition. What time is there then allowed for repose? The advocates for an *active* dilatation of the heart may be able to answer to the satisfaction of the profession.

That much unmerited censure and obloquy have been heaped upon the memory of Laennec, for the order he assigned to the rhythm of the heart's actions and sounds, every accurate observer will, I am satisfied, readily concur with me in thinking. From auscultation alone we cannot derive all the evidence requisite for a full and satisfactory investigation of this important point. But let us inspect the heart's actions in an animal such as the frog, in which they are naturally slow, and not accelerated by the operation to which the animal is subjected, and we shall perceive that no one can attempt asserting, that there is even an instant's pause after each *complete* contraction of the ventricle. That of the auricle succeeds with such inconceivable rapidity, that it appears to arrest the progress of the ventricle's contraction. Even this fact will, I feel, sufficiently justify me for the liberty I take of differing totally in opinion from those of my countrymen who insist upon the following rhythmical order :—" The auricles contract first, the ventricles second, then the pause or state of rest." If I am not much mistaken, those intelligent, and I hope unprejudiced, gentlemen, will not, after an accurate investigation of this point, hesitate to modify, at least, the opinion they have laid before the profession. Though I differ from them, I do not mean to go the full length of asserting with Laennec, that the pause absolutely takes place after each contraction of the auricle ; I have already stated that I could observe no time allowed for that pause or rest, except during the diastole of each cavity. This view I cannot conceive to be incompatible with what either observation or reason would point out for our adoption.

It was my intention to offer some further remarks on the sounds of the heart ; but this paper has already run to such length, that, for the present, I must decline doing so. I cannot, however, conclude, without expressing my fears that the views recently put forward respecting these sounds will be found quite irreconcilable with matter of fact, as far as regards either their cause, or the precise periods of their occurrence. In a former part of this paper I have stated, that the first, or dull, and more lengthened, sound, occurs synchronously with, and is occasioned by, the contraction of the ventricle. Space will not allow me, at present, to go further into the proofs ; but, if the subject be not taken up by some more competent person, I may, at a future period, return to its consideration.

33, Trinity College, Dublin ;
May 10, 1831.

Taliacotian operation for restoration of the under lip. By C. Bryce, M.D.*

In July last the Hakim-Bashi sent me, at Constantinople, the following singular case of destruction by mortification of the under lip and chin, which, from the success following the treatment, seems worthy of notice.

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* Glasgow Medical Journal, May.

The subject of it, a Turkish child three years old, was attacked in June preceding with scarlet-fever, that spread sparingly over the body, and in which the mouth and throat were aphthous but not ulcerated, disappearing by the use of a wine-gargle and laxatives. The subsequent affection of the mouth was preceded by much fever and restlessness, and appeared in a small pustule on the left commissure of the mouth, which became rapidly black, and opened, discharging an offensive sanies; the gums at the same time were discolored, and bled on the child's crying. The sore formed on outside of mouth spread quickly downward and laterally; and on the seventh day of the disease, when the patient was first brought to me, the whole of the under lip and chin presented a fœtid, black, irregular-shaped slough, surrounded by a broad dark-colored line of inflammation, marking the threatened progress of the disease on the integuments, the left cheek, and upper lip, which were painful and hard. The incisors of the lower jaw were loose, their gums and alveoli partaking of the affection, and by contact involving the tip and anterior edges of the tongue. The tongue was œdematous and loaded, but the fauces showed no appearance of unhealthiness. The countenance had a peculiar livid color; body dry and hot; pulse small and rapid; diarrhœa. From certain circumstances, an emollient poultice to the sore, and frequent ablutions of the mouth, and a few drops of laudanum internally, were all that could be recommended at this period. On the third day's visit, and tenth of the disease, observing the rapid progressive destruction of the integuments, the gangrenous parts were touched with diluted nitric acid, and sulphate of quinia with opium was exhibited. This external treatment, twice repeated in thirty-six hours, did not in any measure arrest the spreading of the mortification, which had now involved an inch and half in circumference of the left cheek and upper lip, and extended downwards under the chin. The diarrhœa was checked, and the child had enjoyed some hours of sleep, but was evidently sinking. It was now determined on to apply a fermenting poultice over the diseased parts, and to administer pills composed of quinine, camphor, and hyosciamus, in large doses, and allow eight ounces of English porter daily. This plan, after forty-eight hours' continuance, showed a marked improvement in the patient; the mortification had made no farther progress for the last eighteen hours; the slough was partially detached; whilst the look of the child was improved, with a slower and fuller pulse. The poultice and porter were continued as before, as were the pills, reduced in strength. In a few days the slough was totally separated, leaving a florid granulating surface. The integuments had assumed their natural color and feel; four incisors and two canine teeth, with fragments of alveoli, were removed, as were also three small exfoliations from the under maxillary bone; the tongue had thrown off its slough, and appeared healthy.

The only treatment practicable for the moment, was to encourage granulations by spirituous applications, and support and diminish the loss of substance by compresses and bandages, whilst the general health of the child was improved by liberal diet and change of air. In six weeks a healthy cicatrix had formed, and the breach of continuity was much lessened by its contractions. It was now very evident that a complete, or even partial, reparation of the great destruction of the soft parts could be promised only by an operation, the necessity for which arose as much from the disagreeable deformity of the face as from the evident ill-effects on the system that the constant flow of saliva occasioned. The writer was encouraged to this attempt by the very perfect success of a Taliacotian nose, made a short time before by him at Constantinople. The operation, in which he was assisted by the advice and skill of his intelligent friend Mr. Millingen, was performed by removing from the upper part of the throat a triangular portion of integuments, whose suitable form and size had been judged of by measuring a model of the lip and chin adapted to the deficiency. This segment was now reflected, the twist being made immediately on the point of the chin, and its two angular points attached by ligatures to the commissures of the mouth, previously made bare by scarifications, as was also the whole of the former cicatrised surface. The flap was further supported by adhesive plaster and bandage, and the wound on the throat brought together by the same means. The parents were directed to keep the child in a recumbent posture, and to feed her sparingly on pap. The wound was looked at on the third day; on the fifth the dressings were changed, when adhesion had taken place on one side very completely, and, on the other, although the ligatures had cut through, there was no opening of the wound; there existed no symptoms of excessive inflammation of the parts, or of irritation of the system. In fifteen days the cicatrices were perfectly formed, and the wound on the throat almost closed. On closing the mouth, the artificial lip seemed very well adapted to the other, and even when partially open retained the saliva, and very materially diminished the unseemliness of features. It cannot be yet determined whether or not the second set of teeth, with their alveoli, have been so much destroyed as to prevent the great hold derivable from their growth, by supporting the flaccid flap. On the whole, the result of the operation was very satisfactory, especially at Constantinople, by exalting the practice and utility of surgery amongst the Turks, and encouraging them to submit to operations beyond the barber's province of bleeding and tooth-drawing.

Glasgow, 12th April, 1831.

On the use of Tartar Emetic in large doses in cases of Pneumonia.

There is at the present day, a great difference of opinion amongst the members of the medical profession, as to the effects of large doses of Tartar Emetic in Pneumonia. It is our intention here to examine the true value of the works which have been written on the subject, and endeavor to determine the degree of confidence of which this medicine is worthy. Some practitioners attribute to it the most wonderful effects, whilst others can find no efficacy in it; and others, again, consider it as a highly dangerous medicine. These latter, exclude it entirely from their practice, or only use it as a *pis aller*, whilst the former accord to it, a pre-eminent place amongst their remedial agents.

We have here endeavored to judge of the value of these conflicting opinions, not by the authority of those who have advanced them, but by the documents which they have severally produced. From a critical analysis of the various writers who have treated of this subject, we think that their works fail in inspiring confidence in a plan of treatment, which has received a much higher eulogium than it really deserves. We now purpose to enter upon an examination of these documents.

At their head, we shall naturally place the memoir of Rasori upon this subject, (*Delle peripneumonie infiammatorie e del curale principalmente col tartaro stibiato*) in which, after having laid down the principle of his doctrine, he gives us the results of his practice. We shall confine ourselves to an examination of these results, omitting all that is system, theory, or exposition.

1st. In 70 cases of peripneumonia in the *clinique civile*, treated exclusively with the tartar emetic, in large doses, Rasori cured 61 patients, and lost 9. Whilst on the *clinique militaire*, 15, who were submitted to the same treatment, recovered. 2d. Out of 582 patients in the *clinique civile*, treated with tartar emetic conjointly with blood-letting, 444 recovered—138 died. Out of 165 (*clinique militaire*) treated in the same way, 139 recovered, 26 died. Thus we see that Rasori, out of 832 cases of Peripneumonia, lost 173 of his patients, which is 22 per cent. in the civil, and 14 per cent. in the military hospital.

From this calculation, it will be seen, that the practice of Rasori, is far from being as successful as we had been led to expect from the accounts which have reached us from beyond the Alps, and the noise which this mode of treatment has made amongst us. Nevertheless, we should like to have had the cases from which he has drawn his conclusions, but he has thought proper to give us, in his memoir, but seven,—three where the cure was effected exclusively by the tartar emetic, and four where blood-letting was associated with it. So few of the details of these cases are given, that it is difficult to form a judgment of the degree of phlegosis and alteration experienced in the lungs, consequently, to judge of the efficacy of the plan of treatment. This embarrassment is much increased when he speaks of the cases treated with the tartar emetic and blood-letting, conjointly. What conclusions can we form when we only see (in Obs. 4th and 5th,) that the treatment commenced with bleeding, and 12 grains tartar emetic, which was continued for the three following days, at the end of which time, the symptoms were alleviated, and the cure completed with the salt of antimony. In the case No. 6, venesection was had recourse to eleven times, and in case No. 7, sixteen times, conjointly with the tartar emetic.

Rasori thus expresses himself upon the employment of bleeding in these cases, to which we think a great part of his success is to be attributed. "It is asked why I do not abandon entirely the use of the lancet, when I have found in the tartar emetic so efficacious a remedy. To which I reply, that in a great many cases, the progress of the inflammation is so rapid, that the pulmonary tissue is threatened with destruction, and it is the fear of this which causes me at the same time to resort to the two modes of cure." Further, he says, "In favor of venesection, it may be urged that its effects are experienced in a few minutes, whilst internal remedies require some time for their action to be felt, and in acute pneumonia, the time is too precious for us to lose one single moment." Again, "The number of bleedings, serve as a criterion for us to judge of the violence of the of the disease. *I am accustomed to stop or to continue them as the complaint may seem to require.*" Do not these quotations prove that Rasori has recourse both to venesection and to the tartar emetic, in every case of acute pneumonia, and that he continues the two, during the whole violence of the attack, only leaving the tartar emetic to complete a cure which was commenced, and almost effected by the former agent? We think it but fair to conclude, that as the efficacy of blood-lettings in pneumonia has been confirmed by the experience of ages; the cures in the above cases are to be referred chiefly to it, and that the memoir of Rasori has proved nothing, as to the efficacy of the large doses of tartar emetic. We have, however, the facts collected from the clinique of Rasori, by M. Prato, and published by Dr. Strambio, which gives us some knowledge of the mode and results of the practice of the professor of Milan. We may truly say, the cases have been selected from amongst the unsuccessful ones, in as much as out of 24, we find but 9 cases of cure, so that we shall be obliged to examine each one separately, in order to form our conclusions. The 5th case was that of a strong young woman, who had been laboring under peripneumonia for three days, during which time she had taken 270 grains of the tartar-emetic, and on the fourth day, she was in the following condition:—active diarrhœa; calm; cough less violent; oppression; general weakness, which was considered as an indication of convalescence. Sudden death. In the 6th and 19th cases we find three and five drams of the tartar emetic administered in the space of five and ten days, with complete impunity, and yet the patient sank under general prostration of strength.

In the 9th case, the patient took 60 or 70 grains of the tartar emetic in the course of a month, during which time, he was affected with an apthous inflammation, followed by ulceration of the back of the fauces, with anasarca and ulcerations over the sacrum, and finally died at the very time he was considered on the recovery. In order to shew with what unchangeable hardihood Rasori administered the tartar emetic, we will give in detail, the two following cases.

A young man (Obs. 7th,) was received in the Clinique of Rasori, April 5th, 1809, who had labored for four days under symptoms of peripneumoni, for which he had been bled and cupped on the side; pulse hard and wiry; cough, with pain in the right side of the thorax; (*bled, tartar emetic* 24 *gr.*) 6th inst., vomited twice. (*Tartar emetic* 48 *grains.*) Evening, great augmentation of cough and pain; expectoration, tinged with blood; pulse vibrating; six alvine evacuations. (*Tartar emetic* 48 *gr.*) 7th inst., in the morning, (*tartar emetic,* 72 *gr.*) Evening, exacerbation of fever, of cough, and of pain; frequent vomiting; six dejections; (*tartar emetic,* 72 *gr. blood-letting.*) 8th day, same symptoms. (*Tartar emetic,* 144 *gr. bleeding.* (Evening, vomiting, with increase of symptoms. (*Tartar emetic,* 144 *gr., bleeding.*) 9th day, frequent vomiting, respiration a little difficult, pain moderated, feeling of oppression referred to the epigastrium, great muscular weakness, skin dry and hot, tongue dry. (*Tartar emetic,* 72 *gr., blood-letting.*) Evening, repeated vomiting. (*Tartar emetic,* 36 *gr., blood-letting.*) 10th day, vomiting less frequent, the other symptoms continued. (*Tartar emetic,* 36 *gr., blood-letting.*) 11th day, respiration calm, no pain, but little cough; the patient could take a full inspiration, but could scarcely speak, pulse small, compressible, and unequal, skin dry, and hot, tongue dry; frequent vomiting, with intense thirst. (*Tartar emetic,* 36 *gr., blood-letting.*) Evening, (*tartar emetic,* 36 *gr.*) 12th day, (*tartar emetic,* 36 *gr., blood-letting.*) The patient died the following night. Upon examining the body, some hepatization was found in the right lung. Every thing was in a state of integrity.

An other person (obs. 11th) aged 27 years was admitted into the clinique of Rasori, April 5th, 1809. He had complained for three days of pain in the right side of the breast, with cough, spitting of blood, and difficult respiration; his pulse was scarcely perceptible; heat of skin moderate. It will be unnecessary to give the daily treatment of this patient. It will be sufficient to say that between the 5th and the 11th of April, he was bled ten times and took 826 grains of the tartar emetic. On the latter day he died. On examination there were found adhesions and hepatization of the right lung, the other was in a normal state.

Can it be wondered at, after the perusal of the foregoing cases, that we refuse our assent to the virtues of this mode of practice. Nothing could stop M. Rasori in the administration of the tartar emetic, neither vomiting, dejections, the abatement of the sickness, dryness of the skin and tongue, nor the exacerbations of the symptoms proper to the disease; and all this time he practised bleeding to the greatest extent. Each new dose of the medicine called for a new emission of blood and it is difficult to say which was the most blameable, in this monstrous plan of treatment, the emetics or the venesections. Upon opening the body, they found traces of pneumonia, vaguely designated by the word hepatization, every thing else was in a healthy state, adds the observer, but it must be recollected that M. Rasori did not examine the internal surface of the intestinal canal, that he but seldom observed this part and when he did, he saw on its exterior some indications of inflammation. Simple redness in other places was sufficient to attract his attention. It should also be known that he has often mistaken or considered as unimportant in his counter stimulant treatment, the gastro-intestinal inflammations, when they were complicated with peripneumony, or even when they existed as principal diseases, and that he has more than once treated as pneumonia, an entire different affection.

These are serious charges, but are unfortunately too well founded, consequently we can place but little dependence upon the comparative table of cures which M. Rasori has given us at the end of his memoir. He has based his calculations upon the results of more than 800 cases, and at each step we discover errors. It will be found that this *medecine numerique* will be far from realizing all, which it now seems to promise.

We will examine another work which appears to be much more favorable to the employment of the tartar emetic in pneumonia. (*Traitement des fluxions de poitrine par l'emetique à haute dose*:) par M. Ch. Peschier. We here have no figures, but assertions without any other proof than the word of the author, so that any one who wishes to ascertain the truth, is compelled to base his credence, not upon accurate documents, but upon the degree of credit to which that word is entitled. M. Peschier commences his work by asserting, that he has treated a great number of patients laboring under fluctions from the breast, exclusively with the tartar emetic in large doses and without losing a single one, whilst at the same time his brother physicians had the misfortune of losing a *goodly* number of their patients who were treated in the ordinary manner. This is certainly a most astonishing account. Accustomed as we are to find the most certain remedial agents occasionally unsuccessful, we were led to inquire, if the tartar emetic really possessed an exemption from this general rule and our doubts were converted into a certainty, when we found that M. Peschier had recourse to it in every case of pneumonia, without regard either to the constitution or the symptoms of the patient. It will be sufficient therefore to say, we consider M. Peschier as adding by his work but little proof of the virtues of the Tartar Emetic.

Far different are the researches which M. Laennec has published upon the same subject, than whom no one was more capable of distinguishing an affection of the lungs. Are we however, equally certain as to the results he has given us of his practice in the employment of the tartar emetic in pneumonia? Out of 51 patients he tells us he has lost but two, although some of them had the disease complicated with cerebral congestion and old age. He says he has never seen the remedy fail, except in cases where the patients were attacked at the same time, either with acute pleurisy, cancer, phthisis or diseases of the heart, in conjunction with pneumonia. At the end of 24 or 48 hours, and sometimes as early as the third or fourth hour, he has obtained by the tartar emetic, a melioration of all the symptoms. Sometimes the patient appeared to be rescued from the very jaws of death, and placed by it in a few hours, out of all danger. These effects could be procured at any period of the disease, even when suppuration had proceeded in the lung to a great extent. He asserts that when he had once obtained by this treatment, the most trifling melioration of the symptoms, resolution always took place without any bad consequences. As a further proof, Laennec cites his Cousin Ambrose Laennec, physician to the Hotel Dieu at Nantz, who had lost but three patients out of forty cases of peripneumonia, treated with the tartar emetic.

These successes are not less brilliant than those of M. Peschier, and the account of them emanates from much higher authority, yet it is easy to see the spirit of exaggeration which pervades them. Every fatal case is caused by some dreadful complication, such as cancer, phthisis, disease of the heart, advanced age, or the moribund state of the patient when brought into hospital. It is not the tartar emetic which fails, it is the disease, which is incurable. Far be it from us to suspect the knowledge or veracity of such a man as M. Laennec, but who does not know the veil which theory sometimes throws around the greatest minds. Laennec was the warm partizan of the tartar emetic mode of treatment, not only because he was convinced of its utility, but also from its furnishing him a strong weapon against what is called the Physiological school of medicine, neither the doctrines nor principles of which did he at all approve. As its chief opponent, he was delighted to be able to shew M. Broussais, his famous mucous membrane, as completely familiarized with these large doses of the tartar emetic, as if they had been the most inert substances. We have heard him in his lectures, laugh at the susceptibility of the stomach, and he did not see in the ordinary signs of gastric inflammation, any thing which counteracted the employment of the tartar emetic. We will now give the treatment in one of his cases.

A woman aged 62 years, entered the Hospital Necker, in 1823, with a pleuro pneumonia of the right side. Her age, weakness, and the smallness of her pulse, forbade all idea of depletion, notwithstanding the great redness of her tongue, Laennec did not hesitate to give her 15 grains of the emetic, in five glasses of the decoction of bark. The first two glasses were rejected by the stomach, the remainder produced neither vomiting nor dejections. After pursuing this plan for a few days, the redness of the tongue increased, and the epigastrium became very painful. The yellow sulphate of antimony was now substituted in six grain doses, followed, on the following day, by two grains. This medicine was suspended on account of an excessive diarrhœa, which supervened. The patient grew gradually worse, till the 21st day of her sickness, when she died, after having in secret, (as it was said,) made a full repast. The abdominal viscera were in a healthy state, with the exception of the mucous coat of the stomach, which was pale and exsanguinated.

It appears this woman died from simple indigestion, and that the symptoms of gastric inflammation were illusive, since the stomach was found healthy, notwithstanding her fatal imprudence. At least, so the treatment is justified, and the death explained.

The indigestion and its consequences certainly came *fort àpropos.* The palid and exsanguinated state of the stomach is given as negative proofs of inflammation, and yet they do not by any means exclude more serious lesions of this organ. It must be recollected that M. Prado has frequently seen patients submitted to a similar plan of treatment, who have died suddenly at the very time they were considered convalescent, and without any *indigestion* to which to attribute their disease. M. Vau de la Garde, from whom we have taken the above case, has published four others, coming from the same source, two of which were very remarkable. There was pneumonia with abcess or purulent cavities in the lungs, terminating favorably under the influence of the tartar emetic. In a third case which figures amongst the successful ones, the patient left the hospital, with cough, spit, and fever, with evening exacerbations. He was pale and bore the impression of extreme prostration, but it was said he was guilty of some imprudences which retarded his cure. In two of the milder cases, the patients were cured by the tartar emetic. It must however be recollected that both Laennec and Rasori treated their patients with large and repeated bleedings. These are the only facts we are in possession of, respecting Laennec's treatment of pneumonia with the tartar emetic and it is much to be regretted that he has not given us his cases more in detail, as we should then have been able to accord them their true importance.

The same thing may be said of the analogous cases of Professor Bang and Doct. Wolf. The former, out of 49 patients lost but two, and the latter affirms that in ten cases he verified all which M. Peschier has asserted upon the subject. We well know what credit to attach to M. Peschier. The ten patients of Dr. Wolf were cured entirely with the tartar emetic, *at least they were freed from the inflammatory symptoms in those cases where the principal malady was incurable.* This latter phrase certainly wants explanation. What was this principal malady? May it not have been the pneumonia itself, which continued, notwithstanding the disappearance of the inflammatory symptoms? Whatever it may have been, as we are ignorant of the facts upon which these two gentlemen founded their treatment, we cannot consider it of much value. We can only say that M. Baug is so assured of its efficacy, he prefers it to every other mode of practice. He however generally premises it by a bleeding. He appears to us to be a man, not likely to be enticed by novelty. Consequently we give some confidence to the opinions he has promulgated.

What shall we now say of the concise cases which M. Gendrin has published in the *Journal général de Médecine* (*tome* 107, *an.* 1829.) In six cases of complicated pneumonia, he saved two patients by the tartar emetic, two others died, and the fifth could be cured neither by it, nor by bleeding and vesications. In eighteen cases of simple pneumonia, he obtained twelve cures by the same means. Out of six other patients, two died and four were cured by bleeding and blistering, after the failure of the tartar emetic. In the other cases, M. Gendrin combined the employment of this medicine with other remedial means, such as bleeding, blistering, &c. The fair deductions to be drawn from the above, are, 1st, that in complicated pneumonia, more patients were lost than saved by the tartar emetic; 2d, that under the same circumstances, this medicine failed, where the ordinary remedies succeeded; 3d, that in simple pneumonia, one-third of the patients either died or were not cured, notwithstanding its employment, and that these last were restored to health by the ordinary treatment, after the failure of the tartar emetic.

We will now examine some treatises upon the employment of the tartar emetic in pneumonia, in which the facts were detailed to us, commencing with those published by M. Bailly in his memoir upon the new Italian school of medicine. We will give but one case as an example. A mason was received in the Clinique of M. Tomasini, who had labored for five days under pneumonia. He was treated in the following manner:—1st day, (bleeding, 8 oz. six pills composed of kermes mineral, 1 gr. gum ammoniac, 4 gr. He took a portion in the evening, composed of emulsion, 3 oz. oil of sweet almonds, 2 oz. laurel water, half dr. syrup 1 oz. Tisan containing nitre, 2 dr. honey, 1 oz. in barley water, 4 lbs.) On the second day, the symptoms were mitigated, (bleeding 9 oz. with the same treatment.) Evening, pulse more vibrating, cough more violent, (bled 8 oz.) 3d day, the same, (bled 9 oz. tart. emet. 12 gr.) 4th day, same remedies. Evening. (Bled.) 5th day, (Bled, tart. emet. 12 gr.) 6th day, exacerbation of the symptoms, with difficult expectoration. (Pills, Kermes mineral, 3 gr. gum ammoniac 4 gr. Bled.) 7th day, pain in the head, cough hard; expectoration more difficult. (Same treatment.) 8th and 9th days, (same treatment.) 10th day, convalescent.

To which of the above remedial measures does the honor of the cure belong? We confess ourselves unable to decide. We will give some less equivocal cases published by Dr. Benaben. (*Revue Medicale, Oct.* 1829.) In the majority of these, the pneumonia terminated favorably under the sole treatment of counter stimulants. The Doctor has however given himself too much latitude in his symptomatology. Thus, when speaking of the râle crepitant, which is deservedly considered as an infallible sign, he makes it extend over the whole thorax. In order to show how this loose manner of speaking serves to create doubts in the mind, we will give the two following cases.

Miss D. (Obs. 9th.) without any known cause, was attacked with violent shivering, followed by difficult respiration, and a frothy expectoration slightly tinged with blood; pulse hard, beating 80; tongue moist, but covered with a yellow mucous; bitter taste; epigastrum free from pain. (Tartar emetic, 8 gr.) The first dose produced abundant evacuations both from the mouth and anus, and the patient was much relieved. Nothing occurred to retard her recovery, which was complete on the 10th or 12th day.

A woman, (Obs. 16th.) one month after her accouchement, was seized with a violent shivering, succeeded on the following night by a cough, difficulty of breathing, and spitting of blood. On the third day her skin was moist but very hot; pulse 90, and very strong; pain in the thorax; cough constant; spit abundant, and tinged with blood. Auscultation was not practised; percussion indicated no lesion. (Tart. emetic, 10 gr.) After the first dose the symptoms were alleviated, the sixth produced two dejections and the vomiting of a yellowish matter. The patient felt herself so well she refused to take any thing more, notwithstanding which she completely recovered.

Is it, we ask, with such statements as these, that we are to determine so important a therapeutic question. Is not the reader forced to suspend his judgment, notwithstanding the facts may seem to warrant the treatment of which we speak. In a number of the cases reported by M. Benaben, the most violent symptoms have speedily given way to the tartar emetic treatment, and yet he has not always been as successful as he pretends; for in the 12th case he was obliged to suspend the medicine on the first day, in consequence of the great aggravation of the symptoms, when a full bleeding speedily effected a cure. Furthermore, it appears to us that M. Benaben has most frequently treated simple catarrhs, catarrhal pneumonia, or, at most, pneumonias in their mildest stages, and although he asserts he has lost but one patient out of forty-eight, yet we consider this as but a trifling proof in favor of this system of medication.

We will now produce authority which we deem worthy of great credit, where the tartar emetic was employed not only by itself, but as an adjuvant to blood-letting. It is to be regretted that these cases reported by M. Prosper Gassaud should be so few in number. Before narrating them, the author states, that in all cases of pneumonia, blood-letting should be immediately practised, and repeated as often as may be necessary; that the tartar emetic should not be administered, if there be present any gastric irritation, and that the doses should never exceed six grains. It is on these principles he has treated the patients who form the subject of this paper. He has bled them as often as three times, and applied leeches, cups, and vesicatories, in conjunction with the tartar emetic. Thus administered, the success of the medicine appears undeniable, for we see the patients daily improving under its use. M. Gassaud very prudently suspends the medicine at the end of two or three days, or as soon as there is a decided melioration of the complaint.

We will now consider some cases given under the direction of a man whose habits of exactitude leave nothing for us to wish. We speak of M. Louis, physician to the Charité. There are sixteen cases, six of which being fatal, would seem quite unfavorable to the plan of treatment spoken of. But it should be known that these were of the most severe kind, complicated with other acute diseases, or taking place in persons worn out by old age. Under like circumstances, any other plan of treatment, would probably have been equally inefficacious.

Bressant, (Obs. 9th.) aged 68 years, entered the hospital, five days after he had been attacked with pneumonia, in the following state.—Great prostration; physiognomy altered; face and conjunctiva yellow; intense fever; great thirst; dyspnœa; cough; difficult respiration. Nothing was done on this day. On the 6th day a little of the râle sous crépitant, with bronchial respiration, was heard in the superior and posterior region of the left thorax; pain in the side. (fifteen leeches on the seat of pain.) On the 5th day, the symptoms were aggravated, the râle crepitant gave place to the bronchial respiration; emetic tartar was had recourse to in small doses, and continued for three days; at the end of which time the patient died. Upon examination, the left lung, with the exception of the anterior part of its superior lobe, was found hepatized, and of a brownish color. The anterior part of the superior lobe of the right lung was in the same situation. After the exposition of this case, it is surely strange to hear M. Danvin assert that the tartar emetic is sufficient of itself to cure any disorder of the internal organs. It certainly is not; and in the above case, the patient should have been treated, not with five leeches upon his side, but with large and repeated bleedings. In this manner might he not have been saved?

However this may be, it is certain, that in those cases which were successful, bleeding to a great extent was premised to the tartar emetic, and this latter was given in doses never exceeding 12 grains. In this way the medicine may have been very advantageous; but is by no means certain it was indispensible, or that as speedy a cure would not have followed the ordinary mode of treatment. We shall be enabled to judge of this from the perusal of the following case.

A baker (Obs. 6th.) entered the hospital on the third day of a well marked pneumonia of the right side. (Blood-letting, 4 porringers.) On the following day he was much relieved, but auscultation and percussion shewed there was no change in the state of the lungs.—(Simple tisane). Third day, violent exacerbation, cough more frequent and obstinate, oppression more marked; fever more intense. (Blood-letting, 3 porringers.) He had a good night, and on the fourth day he was much improved; the percussion however was still dull. (Simple tisane.) Eighth, exacerbation equal to the first. (Blood-letting, 2 porringers, tartar emetic 6 gr.) Sixth day, much improved, respiration more free, auscultation more favorable. Seventh day—(tartar emetic, 6 gr.) On the eighth day it was suspended, and in a short time the patient was entirely convalescent.

We ask if it was necessary to have recourse to the tartar emetic, and if so, why blood was taken for the third time, in conjunction with it? How do we know, the cure was not effected by this third bleeding. This mode of depletion is accused of inefficacy, because the malady did not yield at once; but nothing is more common than these relapses in pneumonia, after the second or third bleeding, although the complaint may yield to a repetition of the same thing. When the tartar emetic is administered, the doses are repeated until the pneumonia is checked; why then is not the other mode equally persisted in? The observations of M. Danvin, appear to us to prove, that in severe cases, the emetic is not more efficacious than the antiphlogistic plan of treatment, even if it be as much so, and that in ordinary cases, it answers no better purpose, neither is at all indispensible in any event. Before concluding, we will add, that in several of the cases of which M. Danvin speaks, the patients, during the administration of the emetic, were affected with a painful eruption, which he considered merely as a consequence of fever, but it appeared too often under similar circumstances, not to be caused by the mode of treatment. We will now pass in review the various facts, scattered in the journals and theses of medicine, and published by each author as he thought they might bear upon the point in question.

In the first place we will notice three cases in the practice of M. Guersent, published by his son-in-law, M. Blache, in which the tartar emetic was administered in pneumonia, to children, in doses of 6, 8, or 12 grains, and with perfect success, even after the failure of blood-letting. These cases are worthy of the greatest credit, not only from the high character of the narrator, but from the minuteness with which they are given. In them, the stethescope indicated a hepatization of almost the entire of the left lung; venesection had been practised, and a large number of leeches applied without success, before M. Guersent had recourse to the emetic. This, in a few days, produced a resolution of the pulmonary engorgement, and a complete cure. Notwithstanding these favorable results, M. Guersent advises us not to have recourse to the tartar emetic until the ordinary antiphlogistic remedies have been tried in vain.

Dr. Liégard is also of the same opinion. He has inserted in the *Archives*, (tome 17, page 379,) two cases not less remarkable than those of M, Guersent. In one of them, two bleedings and thirty leeches had failed to arrest the progress of the disease, complicated as it was with delirium. Fourteen grains of the tartar emetic, administered in two days, effected a speady cure. In the other case, four grains of this substance produced the same effect, after general and local bleeding had been ineffectual. In the latter, however, the patient remained very weak for several days, and was affected with great gastric irritation.

Dr. Palais, (Gazette de Santé, 1825,) has presented us with three cases, in two of which the tartar emetic was exhibited with the happiest success; but he has given so few details, we cannot regard them as of very high authority.

M. Vaidy, (*Journal Complémentaire des Sciences médicales, tome* 15,) reports two cases, the first of which was simple bronchitis, with rheum, and was speedily relieved by the emetic. The patient however was much disordered by it. In the other, which was a well marked case of pneumonia, the patient had been bled three times, and forty leeches applied, without relief. The most decided benefit succeeded the exhibition of the emetic, notwithstanding the cough and pain in the side continued for some days; for the relief of which bleeding was again had recourse to, and the patient cured.

Dr. Busedow, (*Journal d'Hufeland*,) has given five cases, in three of which the symptoms of severe pneumonia yielded, as if by magic, to the tartar emetic; but they are too loosely reported to be worthy of much credit. In one of them, the administration of 12 grainsof it, was succeeded by an eruption on the lips, the tongue and the palate resembling that produced by its application to the skin, the cure of which was tedious and difficult.

From the number of theses which have been written upon the tartar emetic, we select for notice a remarkable case contained in that of M. Prosper Compte (1827, No. 166.) and several others related in the theses of M. M. Gauché and Braut. In these latter we find some facts which militate sadly against this medicament. Not only did it fail in producing a cure, but it was succeeded by the same kind of eruption of which we have spoken, together with great gastric irritation, and in one case by ulcerations of the pharynx, the æsophagus, and the intestinal canal. The same occurrence is mentioned in the theses of M. Dagneau de Jumigni. In the theses of M. Grillot, three cases are related of infants of 2 or 3 years, to whom the tartar emetic was administered for several days. It was, however, so far from succeeding, that it produced inflammation of the digestive canal, as was seen on post-mortem examinations. The author supposes, and perhaps with some reason, that these lesions were caused by the tenderness and susceptibility of the organs at so delicate an age.

Conclusions.—After having examined every thing which has been written upon the employment of the tartar emetic, in acute pneumonia, to what conclusion shall we come?

The first thing which strikes us is, that the majority of the works cited, although favorable to the treatment in question, yet are wanting in that certitude and minuteness of detail which can alone entitle them to full belief. Notwithstanding all the doubt and darkness which envelopes the subject, it must be admitted, this plan of treatment has some advantages. As a sole remedial agent, the tartar emetic has in its favor only the vague and equivocal cases of M. M. Peschier and Wolf, together with some others, which, from the mildness of the symptoms, might have been cured by other means. Allied with bleeding it appears to have advantages both numerous and well authenticated; but it must be recollected that the former went hand in hand with the latter, or if it were temporarily suspended, it was immediately recalled upon any exacerbation of the symptoms. Whenever the tartar emetic has been premised by bleeding, the cure has been assigned to the former agent. In many cases reported of the efficacy of this salt, it appears to us they were such as would have been cured by almost any treatment. In a few, all the resources of art appear to have been exhausted before the emetic was exhibited. Our opinion is, that if we take away from the cases of pneumonia treated with large doses of tartar emetic, those in which blood-letting played a conspicuous part, we shall find the instances in which the former agent has been really and undoubtedly efficacious, very small indeed.

It may be as well now to inquire if the advantages of the tartar emetic have been counterbalanced by its failures, and by the bad effects which have occasionally resulted from it. Certain it is, that the majority of writers have shown a good deal of address in so explaining their misfortunes as to shield their favorite from blame. The same facts when taken from the clinique of the professor, and from other sources, are not always found to agree, and it has more than once happened that the work of the pupil based upon the same circumstances, has proved a victorious refutation to the master. For a proof of this read the work of Doctor Strambio, containing observations drawn from the clinique of Rasori, and then say if this medicine is always innoxious and efficacious. We will conclude by saying, we would recommend the tartar emetic when the ordinary remedies had been unsuccessfully tried, but we would never exhibit it in the very large doses related in some of the foregoing cases.—*Archives général de Medecine*, 1831.

New Theory of the Human Voice.

Continued from page 298.—*Conclusion.*

65. As we have now acquired positive and exact information of the mechanism of the voice, the study of its different modifications will be more easy. The first question which presents itself, relates to its tone. For an instrument, to render a clear sound, the reed and tube should have an exact relation to each other; when the tube is intended only to favor the sound, this relation is difficult to obtain: if the reed is too fine or too thick, the tube too short too long, the instrument has a dull, broken, or nasal sound. We cannot expect physiologists to know the cause of all the varieties of tone. The proper tone of all reed instruments depends, firstly upon the substance of the reed, secondly, on the form of the tube, thirdly, on the substance of the tube. The human organ of voice differs in these three points from all known instruments. It is not astonishing, that even in those which approach it most in tone, the difference is so considerable.

66. A slight objection here presents itself: Can the mouth, though composed of soft parts, contribute to the resonance of the voice.—If we cause the spring of a Jew's harp to vibrate in the air, it is scarcely heard, while the same instrument placed between the teeth, produces a considerable sound, and the motion of the lips causes variations of the tone.

To strengthen the voice, we contract the soft parts, which places them in the most favorable condition for vibration, and resonancy. The difference which exists between the acute and grave tones, shall be examined in the article on singing. When the tube is not widely opened the voice is dull, as when it issues by the nares. The broken voice of the old man is caused by the disproportion between the tube and reed. The loss of one tooth causes an alteration in the voice, and when they are all gone it is changed considerably. The rigidity of the soft parts, and the ossification of the larynx may modify its tone, I do not believe, however, that the last has much influence.—The larynx often begins to ossify at thirty years, and at sixty the greater part is converted into bone. We have heard singers who had passed this period, produce as clear tones as during their youth.

The huskiness of the voice is caused by some mal-formation, or disease of the human reed; it becomes husky in chronic laryngitis. This accident appears to be the inevitable consequence of the section of thyroid cartilage, as proposed by Dessault.

The crying voice is caused by obstructions in the nasal fossæ. As I have before observed, coryza gives this character to the voice, it is also produced during the emission of tears. This tearful tone may be produced at will, by an artful woman or a good actor.

68. The nasal voice is one of the points most controverted. It is more easy to point out the weakness of those theories which have divided physiologists, than to construct a better.

The first, Dodart asserted, the vulgar expression, *speaking through* *the nose*, was a sin against physiology. Mr. Magendie pointed out the error of Dodart, but fell into the opposite extreme. Facts contradict the one as much as the other.

1st. In speaking, if a part of the air be expired through the nares, the voice becomes nasal.

2d. If the nasal cavities be obstructed by polypi, the same effect is produced.

A man consulted me for a carcinomatous tumor, which occupied the nasal fossæ; the vomer was forced towards the left side, the tumor elevated the floor of the orbit, depressed the palatine arch and completely obstructed the anterior nares, the bones were perforated by two ulcers, one of which was towards the superior orifice of the lachrymal duct, and the other through the external wall of the mascillary sinus. This man spoke through his nose in a remarkable manner, at the same time his voice was weak, and resembled that of a goat or a crying child.

69. The voice is nasal when the air traverses the nostrils forcibly, and when they are hermetically closed, we may infer that the nasal voice is caused by some vice of the tube, which diminishes its resonance. When the velum is divided by the congenital fossæ or venereal ulceration, the voice is always nasal.

I have seen, at the hospital of Val-de-Grace, an overseer of the poor, who was formerly a soldier in the army of Egypt. He had been wounded at the siege of St. Jean d'Acre, by a Turkish arrow; the iron divided the superior jaw and velum palate. It was extracted by M. Larey. There remained an opening in the velum through which the little finger could pass. The voice of this man was nasal. If the other extremity of the tube be deformed, the effect will be the same.

In ozæna, the voice is nasal after the nose has been destroyed. If with the extremity of the fingers we stop the nostrils, we can sing with clearness, but when we compress the cartilages, the voice becomes nasal.

Have you not seen old people whose voices are clear when the nasal cartillages are uncompressed, become nasal when they wear their spectacles?

It is certain that this explanation is insufficient; we are aware that many celebrated singers, in conversation, have the nasal tone. Even in the experiment I have pointed out that of stopping the nostrils with the extremity of the fingers, or compressing the cartillages, we obtain different results whether we speak or sing. In the act of singing, if we articulate as in the gamut, and at the same time contract the orifice of the mouth, the sound will be decidedly nasal.

70. Has the human reed any influence in producing that phenomenon? There are some artificial reeds which render a nasal sound.—The cry of dogs, whose glottides have been exposed, present this phenomenon: it was very evident in the dog used in my first experi-

ment, after having removed all the parts of the larynx with the exception of the chordæ vocales.

By ascertaining the reciprocal influence of the reed and tube, we shall perhaps find the cause of the nasal sounds of the human voice.

Dodart has remarked, that singing requires more exertion than speaking; the voice which is firm in an ordinary conversation, becomes tremulous in singing; when we sing, those parts which concur in the formation of sounds, act more in unison; a person's voice is recognised with greater facility in ordinary conversation, than in singing, when the sounds must obey certain precise rules.

Does not this explain the fact cited, of many agreeable singers, whose voices in an ordinary conversation are discordant and nasal?

71. Next to variations of tone, are those of strength, which are more easily explained. The instrument being given, the strength depends on the velocity and quantity of air which traverses the reed. The same rule will apply to the human instrument.

The same causes which vary the sounds of different instruments, in the same manner increase or diminish the volume of the human voice.

These causes are the size of the reed, the length and proportionate volume of the tubes.

The vocal ribbons in man are longer and thicker than in women; the nasal cavities are much more ample, hence the voice is stronger. The size of the tube and the quantity of wind are of great importance. Men who possess a sonorous voice have generally the trachea and chest large and surrounded with powerful muscles. The trachea of the lion is of an enormous magnitude.

72. The weakness of the voice depends on conditions altogether different. When an individual varies at pleasure the strength of his voice, as an able musician graduates the tone of his instrument, the softness depends on the small quantity and diminished velocity of the expired air.

The sound becomes soft and low as the quantity and velocity of the air diminishes, and the voice sounds like a distant echo, which affords a simple and natural explanation of a singular phenomenon in ventriloquism.

73. I am acquainted with an individual who is an excellent ventriloquist, in which art he has instructed me.

The whole lesson consisted in making me repeat certain syllables, principally vowels, which are at first more easily pronounced than consonants. As I had difficulty in imitating him, he caused me to speak so softly as only to allow the smallest quantity of air to escape from the chest.

This exercise continued for some time, fatigued me much, which was caused by the accumulation of air in the chest. The uneasy sensation was confined to the base of the thorax and the epigastric region. In articulating, the lips are to be opened as little as possible.

This precept is to assist the illusion, by deceiving the eye of the spectator. The ventriloquist can articulate with the mouth open, which proves that in this phenomenon the voice is modified by the larynx only. There is another useful precaution to make the sound appear more distant, which consists in turning the mouth towards the place from whence the sound is supposed to come, for instance, depressing the head when the voice is to come from the cellar, or turning the face upwards when the sound should issue from the garret; and although these motions lessen the illusion, the most skilful ventriloquists, M. Comte included, adopt them.

74. Is this illusion confined to the human voice?

It is not. Musicians can produce the same effect by diminishing the tone of their instruments. It is difficult on first hearing the sounds of a harmonicon to distinguish it from a distant flute. In the celebrated waltz in Der Freischutz there is a kind of *instrumental ventriloquism*, to such a degree, that when the waltzers disappear the sounds appear more and more distant until we hear but the louder notes, and then all is silent. The imitation is perfect, and the illusion could be equally so if the orchestra were concealed, or if the musicians could practise all the grimaces of the ventriloquist.

In all expedients to produce an illusion, it is necessary to add to other resources surprise. Our senses, when forewarned, rarely deceive us. Raise the curtain which conceals a new scene, and if the laws of perspective be not violated, our view is lost in an immense distance. But if the machinery be badly managed, the illusion does not occur, for the judgment takes the ascendancy. Between the illusions of sight and hearing there exists an analogy which has not been sufficiently remarked. The painter decreases his lines, the musician his tones, and the apparent distance is the effect of this lessening.

75. There are certain tricks of ventriloquism which cannot be explained in the foregoing manner. One placed at your side will make you hear loud sounds and cries, merely by changing his voice. We know that by practice we can imitate successfully the voices of different individuals, the cry of dogs, the mewing of cats, and singing of birds. The physiological act is the same as in the ordinary voice; all voices depend on a flexible reed and tube; to counterfeit it is only necessary to give the human reed the length and tension of the one we would imitate, and to elongate or shorten the tube in analogous proportions. In the same manner, if we succeed in remembering the peculiarity of a cry uttered at a distance, it will not be difficult to imitate it. To do which we must make many, and for some time unsuccessful attempts, but with patience and perseverance we eventually will succeed. A comedian will change at will his voice and face. We have seen at Paris, M. Leclerc imitate the voice of a well known actor so as to be taken for him. We may ask the reason why animals cannot imitate the human voice. Vicq d'Azyr says, "most quadrupeds

have nearly the same apparatus in the larynx, and many have parts which are not found in the human subject; from which we may infer that the pre-eminence of the human voice does not depend on organization, but is the fruit of industry.

76. It remains for me to finish the history of ventriloquism, that I may refute the different theories to which it has given origin.

I shall not examine the opinions of the ancients, who were too ignorant of the structure of the organs to form any correct ideas of their actions. Among the moderns some believed that the voice was formed during inspiration, which was the opinion of Haller and M. Mazer de Bonn.

It is true that during inspiration broken and even articulate sounds may be produced, but to be convinced that the sound is caused during expiration, it is only necessary to observe carefully a ventriloquist. M. Fournier asserted that the voice was forced into the lungs by the action of the glottis, which assertion is purely hypothetical. Others are of opinion that the voice is swallowed and re-echos in the digestive tube. This opinion originated with M. Richerand, he however has abandonad it. According to M. Despiney, the glottis opens largely, and the epiglottis is depressed. Now, when the glottis is widely opened, no sound is produced; the only experiment which has been made by M. Despiney was on the dead subject, and the results were far from being satisfactory.

77. Physiologists forced to study in others what they could not repeat themselves, have fallen into error on this subject, and it has been reserved for ventriloquists to explain the secrets of their art. Many have made the attempt, but with little success. The Baron Mangen, in 1772, writes as follows: "I observe the precaution to retain in my throat a certain portion; it is with this portion of air which I permit to escape with difficulty, I produce sounds." From *this* explanation it is evident the larynx is useless. He does not explain how he permits the retained air to escape.*

M. Comte thinks the voice is formed in the larynx, but that the sound is drawn into the lungs by a rapid inspiration. But the sound is heard as soon as it is formed. Besides if this were the fact, it would be necessary to make an inspiration with each sound, which cannot be the case.

78. The theory sustained, in 1811, by M. Lespagnole, in his inaugural thesis, is the most ingenious. He was not only a ventriloquist but a good anatomist and physiologist.

According to him the voice is composed of a direct and a reflected sound; the first traverses the mouth, the second resounds in the nasal cavities. When we hear distant cries it is the first, this also is the voice heard in ventriloquy; and to prevent its sound from re-echoing in the nasal fossæ, the curtain of the palate is elevated so as to close the posterior nares. The voice is made at will to appear at a greater or less distance, by elevating or depressing the curtain of the palate.

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* If we admit what is very probable, that M. Mangen confounds the throat with the chest, and in it keeps a portion of air in reserve, his theory, badly explained, is the same as mine.

This theory, like those which preceded it, is untenable; for when the curtain of the palate is depressed, (which according to his theory is occasionally the case) the voice will be the consequence of the union of the direct and reflected sounds, which will prevent the illusion. Another very natural consequence of this theory is, when the posterior nares are obstructed, as by a polypus, the individual must necessarily be a ventriloquist. According to this we might produce the same effect in animals, by closing the posterior nares, or by opening the larynx below the os hyoides. This has not been confirmed by experiments.

79. It is nevertheless a fact, say some, that according to the observations of M. Lespagnol, the velum is elevated in ventriloquy.

This I do not deny, but at the same time we must recollect that the voice, according to Mayer, is made by it, one octave higher.

We must study the philosophy of the vocal tones, to be aware of the influence which the velum possesses in rendering the voice grave or acute.

Of Singing, or Vocal Tones.

80. If we compare all the tones which issue from the human larynx, from the grave notes of the thorough-bass to the acute sounds of the infant or eunuch, ~~we shall find that the human voice includes three octaves. But~~ each particular voice has not this extent of sound, and whether high or low, we rarely find one which can render distinctly more than two. This is nevertheless an immense result, when we consider the means adopted by nature to arrive at it.

81. In artificial reed instruments there are two methods of varying the tones. The first consists in varying the length of the vibrating lamen, but the inflexibility of ordinary reeds will not allow us to apply this method to instruments with a single tube; the second is to render the tone of the reed subordinate to the tone of the tube, and by the means of lateral holes the musician can regulate the sound of the instrument. The second method is adopted in the bassoon, hautboy, English horn, and clarionet; the first is found only in the two organ pipes, the regale, and in the human voice. In these instruments the sound is caused by the reed alone; there are many reeds which are divided into tones and semitones throughout their whole length. The regale, which has no tube and is not used on account of its crying and nasal sound, is a good image of the larynx of the dog. In the human larynx the reed is connected with a conical tube, the expanded extremity of which is half closed in order to favor the resonance of the tone.

82. The sounds of the organ are in unison with the tones of the human voice; rumbling and hollow in the low tones, it sounds in unison with a tube eight feet long; in the high notes it is as shrill

as the voice of a child. To produce all these tones two changes have sufficed: the tongue which covers the gutter of the reed has diminished in length; the tube, which is about six inches long for the gravest tones, has decreased to four for the most acute ones.

83. Let us construct with living reeds and tubes a similar instrument; for the gravest tones we will have those who sing thorough bass, then voices which are less grave, then the voices of women, and finally eunuchs and children. What then are the differences which produce these various tones? In the thorough bass the chordæ vocales are about ten lines in length, and of considerable thickness, in the counter tenor the vocal chords are smaller, and the larynx is less developed.

In females they are about six lines in length, and in the child still smaller and very fine; at birth I have seen them scarcely two lines in length.

84. There are analogous changes in the tubes. It is longest in thorough bass-singers, the larynx in them descends almost to the middle of the neck, the mouth is large, the nose long, and the nasal sinuses well developed. Compare the visage of a church singer with the countenance of one of our theatrical counter tenors, and the difference will be very evident; in these last the larynx is situated nearer the jaw. In females, the features are less prominent and the larynx is close under the inferior jaw. In children the larynx is still higher, the mouth smaller, the nasal sinuses not developed, and the nares scarcely large enough to permit respiration.

85. There are other less important differences. The laryngeal ventricles which represent a mouth-piece, vary in depth and extent; in like manner the player on the trumpet or horn with his lips varies the dimensions of the mouth-piece of his instrument. The *epiglottis* has an exact relation to the size of the larynx and the trachea, which last, as M. Grénièr has remarked, is not without influence in the production of sounds.

86. We now perceive in what consists the difference between the acute and grave tones.

The same conditions are necessary for the voice to descend or to ascend the gamut and produce the high and low notes. To produce the high notes the vibrating lamina should be shorter and more tense, the tube should diminish in the same proportion, and the windpipe should alter its calibre to furnish a greater or less volume of air. These assertions shall be confirmed by experiments.

87. The human reed possesses a property common to all flexible ones, viz. that of being made more or less tense, which produces variations in its tone. The experiments of Ferrein on the cadaver confirm this assertion, and I have obtained analogous results on the living subject.

Having exposed the larynx of a dog, I drew the arytenoid cartilages backwards, keeping them together; this made the chordæ vocales more tense, and contracted the anterior portion of the glottis—the cries of the dog in consequence became more acute. In my next experiment I approximated the thyroid and arytenoid cartilages, which enlarged the glottis and rendered the chordæ vocales less tense, and the voice became quite grave.

88. This tension of the chordæ vocales contributes to render a more acute sound; the same result is obtained by lute-makers, by having their reeds thin. I will observe that the size of the slit which separates the lamina influences the sounds; the larger the space the more room the chordæ have to vibrate, and this disposition coincides with the greater thickness and less tension of these chords, which are the three principal causes of the low tones.

Having, during my experiments on dogs, remarked that the cries of the animal ascended or descended in proportion to the intensity of the pain they endured, I was anxious to know how many notes the voice could accomplish, and to see at the same time the action of the glottis.

A dog was operated on as in the first experiment, during the section of the inferior jaw, the cries were loud and acute; after the section was completed, they became more grave, as his voice descended, he produced many successive notes. With a flageolet which was in unison with it, I found that he produced fine notes in the following order: la, sol, fa, me, sé. The glottis was closed posteriorly, its anterior portion solely permitted the escape of air. In the first experiment, we did not perceive the variations in the sound. When it was repeated, we perceived the slit in the glottis enlarge at its anterior part, as the sounds became grave, and not posteriorly, as has been generally believed.

When the animal was irritated, the sounds became more acute, and ascended as high as the superior sé. The slit in the reed was then much contracted, and almost closed posteriorly; the air only vibrated in the narrowest part of the larynx.

This novel and curious experiment has been repeated many times, and is a proof that the method of Bichat, for exploring the larynx is faulty; its results are entirely contrary to mine, which I believe are free from error. Every dog I have experimented on, has presented the same phenomena. Whenever the animal contracted the glottis, in struggling or to produce sound, the air passed through the anterior part; and I have never obtained any sound in the living animal, when the air passed posteriorly; furthermore, this fact cannot be explained by any system of reeds.

89. It is not then by any imaginary approximation of the lateral halves of the thyroid cartilage, varying the length of the chordæ vocales, and the size of the space between them, but it is the approximation of the anterior angles of the arytenoid cartilages, and the posterior extremities of the chordæ vocales which causes variations in the tone. Their tension and thickness are changed by the action of

the crico-thyrodien muscles, which draw the arytenoid cartilages backwards, by bending the cricoid cartilage on the thyroid. It has long been known, that in ascending the gamut, the finger placed in the crico-thyrodien space is pushed outwards by the approximation of the two cartilages. The reverse happens when we descend from the high to the low notes.

90. Thus it is that the human reed equals in power the united pipes of the organ. No inflexible reed can produce so great a variety of tones; there are some performers, who, on the bassoon and hautboy, can produce many notes, but they cannot go beyond one octave.

91. Let us now see how the singer can accommodate the length of his tube, to the sound of his reed. As the voice ascends, the larynx gradually raises until it is close to the inferior jaw, and in those who sing thorough-bass, this elevation of the larynx will shorten the tube one inch. According to M. Dutrochet, this ascension of the larynx serves to approximate the lamina of the thyroid cartilage, and to diminish the size of the glotus. Two remarkable facts appear to corroborate this opinion.

1st. When the larynx is at its height, and the voice never high, we can, by compressing the lamina of the thyroid cartilage, increase the acuteness of the tone.

2d. When the tone is most grave by pressing on the salient angle of the thyroid cartilage, we separate the lamina and the voice will sink a semi-tone.

92. These facts confirm the theory which we will offer on the contraction and dilatation of the glottis. The constrictor pharyngeus inferior, and the thyro-hyoid which draw the larynx upward, are supposed by M. Dutrochet to compress the thyroid cartilage. If we examine this muscle, we will perceive that it is attached to the posterior raphe of the pharynx upwards and backwards, its insertion is downwards and forwards. 1st. In the great cornua of the thyroid cartilage. 2d. in the tendinous raphé which I have described in the place of the oblique line. 3d. in the inferior cornua of the thyroid cartilage. 4th. in the internal portion of the cricoid cartilage, and sometimes in the first tracheal rings.

The greater part of its fibres are inserted in the lower portion of the larynx, where the posterior border of the thyroid cartilage is a quarter of a line asunder. The superior fibres of themselves are insufficient. I have attempted on the dead subject by pulling these fibres, to approximate the great cornua of the thyroid cartilage, but without success; the size of the glottis was not lessened.

I made an experiment on myself, as follows: I restrained the larynx in its ascent, which should excite more forcibly the contractions of the inferior constrictor to approximate the thyroidien lamina; nevertheless, I ascended the gamut with difficulty, for the tube was too long for the acute sound of the reed.

The compression after the manner of D. Mutrochet, produces but slight alteration of tone, while it causes insupportable embarrassment to the singer.

Even when the larynx has become ossified, the voice occasionally preserve its acute tones.

Finally, the constrictor pharyngeas inferior, is of no utility in closing the glottis, even if it possessed the power. During considerable muscular exertions, the glottis is completely closed by the thyro-arytenoid and arytenoid muscles; and if the larynx ascends the cause should be attributed to the pressure of the air from within the chest tending to escape through the glottis. In this case, the larynx ascends only about half as high as it does during the production of acute tones.

93. The os hyoides ascends with the larynx, and the tongue approaches the roof of the mouth; the buccal portion of the tube, or that through which the sound issues, becomes shorter and narrower.

We have seen that the tube in the organ opens in half its circumference only, which leaves a sinus for resonance analagous to the nasal sinuses of animals. The sinus in the organ pipe diminishes in size, as the tube diminishes in circumference, while the nasal sinuses are always the same, constituting between these tubes an essential difference.

The organ pipe is an imperfect imitation of the human vocal tube. I shall point out their analogies, and at the same time, show in what their difference consists.

94. By examining the back of the mouth, during a very grave sound, we will perceive the velum much depressed, so that the sound may enter the nares with facility.

In singing, as we ascend the gamut, the velum rises in proportion to the acuteness of the sound, and closes the posterior openings of the nares. When the sound ceases, it assumes its ordinary position.

When we sing in a high tone, the velum forms with the roof of the mouth, a horizontal plane. and the pharynx is distinctly seen. The knowledge of this fact may be useful to those who wish to examine this organ to detect morbid changes.

The entrance for the sound in the nares is then much narrowed; and in singing, when a falsetto is produced, I am inclined to believe the sound does not enter the nares. My reasons for this shall be given.

95. It is evident that these motions of the velum prevent a great quantity of air from resounding in the nares. The resonance is diminished, and the cartilages of the nose are not felt to vibrate as when the mouth sounds are grave. May not the ascension of the velum close the middle meatus, and thereby prevent the sound from echoing in the posterior ethmoidial cells?

96. We may infer that the laryngeal ventricles are contracted during acute sounds. In proportion to the contracted state of the glottis, is the proximity of the arytenoid cartilages, the middle fasiculi of the

thyro-arytenoid muscles, and the superior ligaments of the same name which are inserted in the arytenoid cartilages. According to M. Mayer, the epiglottis is not motionless in this general commotion; during grave tones it is applied to the back of the tongue; in acute sounds, it assumes a horizontal position, and its two borders curve inwards in such manner as to give it the form of a horn, which receives and condenses the sonorous wanes. Furthermore, it vibrates simultaneously with the chordæ vocales. The object of these changes, is to strengthen the sound. I have attempted, but unsuccessfully, to perceive the movements of the epiglottis, which M. Mayer has described. I cannot imagine how he succeeded.

98. The trachea undergoes some changes, which have already been indicated by authors; it is elongated and contracted in acute tones, and in grave tones its condition is directly opposite.* As its first rings are continuous with the cricoid cartilage, the vibrations of this last are transmitted throughout its length.

In very grave tones the parietes of the chest and abdomen, the muscles of the extremities, in a word, the whole body vibrates.

The explanation of these phenomena is simple. When the air traverses a reed the cause of its vibration is, that instead of a continued stream of air, there is a succession of puffs; in the trachea it is agitated in two modes; one impulsive, caused by the expiratory forces, the other repulsive, which it receives from the vibration of the chordæ vocales. These alternate impulses are transmitted to the walls of the tubes in which they occur, and to the muscles which are situated over those cavities, it is the same in the organ when a grave sound is produced in one piece, the whole instrument vibrates. A powerful and sonorous voice not only causes the singer himself to vibrate, but those who hear him, and the windows and walls of the church in which he sings.

In very acute tones the vibrations are so rapid that the effects are not so obvious.

99. M. Mayer denies the assertion, that the size of the trachea can have any influence on the tones of the voice. But among us the contrary opinion has prevailed; M. Grénié has tested the influence of the wind-pipe in artificial reeds. A performer on the bassoon or clarionet is by no means indifferent whether the cavity of the mouth is enlarged or contracted.

We know when we produce sounds in inspiration the mouth is the wind-pipe and the trachea becomes the tube. If we give the mouth a fixed size and inspire strongly, we will with difficulty obtain more than one note, but by enlarging or diminishing the capacity of the mouth we will be able to produce many notes.

This experiment proves to us the influence of the tube; the larynx does not move, the tube is neither lengthened nor contracted;

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* The narrowing of the trachea discovered by Reyrilhe in 1773, was well known to the ancients, and formed the base of an important therapeutic principle.

and the same reed which in expiration will sound two octaves, cannot now accomplish one.

In certain cases, by prolonging or contracting the tube, we give the voice more extent. In descending the gamut, the mouth being open, when I came to the lowest notes, I found by elongating and contracting the lips, I could descend a half tone. This fact is well known to singers, who frequently have recourse to it.

The deductions from the experiments cited are, that it is impossible to produce an acute sound with a tube even a half inch too long; again, that it is impossible to produce the high notes if the larynx does not ascend.

100. Thus the trachea, larynx, and the two distinct portions of tube concur in producing the different notes of the gamut. When all these parts are in the normal condition, and act simultaneously, the voice is full, true, and sonorous; if any of these conditions be wanting, the voice is false.

101. Some voices are false by reason of the incorrectness of the ear, others by weakness of the muscles of the voice. Where timidity or a peculiar idiosyncrasy embarrasses vibration, the voice trembles and is generally incorrect.

But one of the most frequent causes of the falseness of the voice is the disposition of the reed and larynx. Thus when the ossification of the nares has been completed, and too much exertion has caused the larynx to be more developed, as in the insane, and particularly in public women, the voice becomes husky and acquires a particular tone; it is also false. In young persons about the time of puberty, the voice is broken, which is caused by the changes the vocal organs are undergoing. When the organs are developed the voice becomes fixed.

102. There are some whose voice in talking or singing with much animation, change involuntarily into a screaming sound. Instrument makers have remarked, that when reeds are made too thin, they are subject to this inconvenience. Might not this be the cause in the human subject? I knew an individual, who, from his voice, gait, and countenance, might have been mistaken for a woman; his larynx was situated high in the neck, and formed no projection, whenever this man talked vehemently, or got in a passion, his voice had this peculiarity. It occurs frequently in ordinary singers, when they sing the high notes; in them it is produced by the same causes as the falsetto.

103. When the full voice has arrived at its greatest extent in the higher notes, it is possible to go higher, but the tone is changed to what is called the falsetto or false voice. To produce it, the larynx attains its greatest elevation; the head is thrown backward, and as in its ascension the superior orifice of the larynx is inclined forwards, the vocal tube, which is ordinarily inclined forwards, approaches the right line, at the same time, the lips widely separated, increase its evasion as much as possible.

The velum palati undergoes changes equally important, the posterior pillars are applied against the larynx; while the anterior approach the uvula, and with the base of the tongue much elevated, circumscribe a narrow opening, through which the sound escapes into the mouth. The sound then during the falsetto does re-echo in the nasal cavities. When we stop the orifices of the auricular ducts during the highest notes of the full voice, the sound appears louder, but in the falsetto the sound is much weaker; from which we must infer that the sound in the full voice traverses the tube of Eustachius.

In the falsetto we have a tube of a different kind, connected with the reed. This theory, which is founded on observation, explains to us how we can with the full and false voice produce the same note; the only change, is the disposition of the velum, which converts a double into a simple conical tube; and when an unfortunate singer in the middle of a delightful melody, changes the one sound for the other, we are aware that depends on the indocility of his velum pendulum palati.

104. I shall here make a few remarks on those single tubed instruments which are analagous to the human voice. I was not aware of any other than the human voice tube in the organ; I consulted M. Adler, of Mandan-street, to whom I am indebted for considerable information on this subject. The Italians have an instrument which gives all the tones with a single tube; it is a kind of hautboy. The reed is double and solid; the mouth-piece is rather long. The instrument is a double cone like the human tube, and if the different parts were joined directly, it would be about six inches in length; but as the inflexible reed does not possess sufficient power, it is necessary to join to it two flute bodies, with lateral holes, which produce the different tones.

The English horn is an imitation of this instrument; it is, however, curved, which makes it approach more nearly the human tube. Its tone does not differ much from the Italian instrument; it is, however a little softer. I am ignorant whether this should be attributed to the form or the substance of these instruments. They were made by M. Adler. I shall merely observe, that the expanded portion of the English horn has two holes, which are analagous to those in the expanded part of the hautboy. In the Italian instrument they are not found.

105. Such is the theory of the voice, which I believe to be correct, for it embraces more facts, and has more system, than any which has preceded it.

I shall omit *Speaking*, which is not necessarily connected with my subject, and has been, probably, more successfully investigated.

106. The sound of the voice during articulation, is more modified than in singing. Vague and confused as it is when it issues from the larynx, it is decomposed (as the prism decomposes a ray of light,) and separated into its primitive and secondary vowels. We know that consonants depend entirely on the mouth for their sounds. It

is generally believed the vowels are formed in the larynx solely. To be convinced of this, it is only necessary to allow the voice to escape by the nares, in which case no vowels will be distinguished. When we whisper, we hear the sound of vowels, although no sound is then produced in the larynx.

107. The tube is then essential in the formation of articulate sounds, whether vowels or consonants; the *h* alone can be pronounced with the mouth closed, the sound being formed in the larynx. During the formation of vowels, the tube is motionless, and the tongue is as an inferior wall. The consonant, on the contrary, requires for its pronunciation, the action of the parietes of the tube; the sound of the vowel can be prolonged during aspiration; the consonant ceases with the act which gave rise to it.

It would be more physiological to divide sounds into active and passive. The number of vowels would be increased by the addition of the letters *h*, *j*, *s*, *r*, and *f*, all of which are passive articulations; our alphabet would then contain more vowels than consonants.

108. The power of articulation being entirely the product of habit, I do not know why authors deny the possibility of its being acquired by the inferior animals. The cries of most animals contain vowels and consonants.

Those vowels which are pronounced with least difficulty are most often met with, it is by them the infant first makes himself intelligible.

By patience and industry, we can elicit articulate sounds from the bills of birds, and from the mouths of brutes. Liebnitz mentions a dog who could repeat whole words. We can, by imitating the action of the buccal parietes, give to instruments the sound of words. The automaton of M. Robertson can pronounce several syllables.

109. Speech is different in conversation, in singing, and in declamation. This depends on the relative action of the reed and tube. During declamation, more air is expelled the thorax, the vocal chords vibrate with more energy, and the resonance is also more considerable. The buccal parietes are more contracted, and the enunciation is slower and more distinct that the resonance may be more perfect. Declamation is more properly a chant, confined *to* a few notes, in which the voice produces many harmonic modifications, incapable of being produced on our instruments.[*]

I shall now conclude by stating what I think I have established in the physiological part of this memoir.

1st. The voice is the immediate result of the vibration of the chordæ vocales; it resounds in the nares, and escapes by the mouth.

2d. To produce this sound, the posterior extremities of the chordæ vocales approach each other.

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[*] They may be imitated with a single reed, or one which has a flexible tube. Recitative is a kind of declamation in which the performer is not confined to so few notes. There is not much difference between it and singing.

3d. The chordæ vocales represent a reed of the fourth kind, viz: double and flexible; the trachea is the wind-pipe; the thyro-artenoid performs the office of the lips of the musician; the ventricles of the larynx are the analogues of the mouth-pieces in the serpent, horn, and trumpet; the double tube in man is imitated by the half-closed human voice tube in the organ.

4th. The tone is modified by the kind of reed, the substance and configuration of the tube.

5th. The nasal sound is caused by some obstacle to the resonance of the voice in the nasal fossæ; sometimes it depends on the reed.

6th. The strength of the sound depends on the velocity and quantity of air traversing the larynx.

7th. The voice of the ventriloquist is formed in the same manner as it is under ordinary circumstances, the illusion is caused by the direction and modification of the sound.

8th. The difference in tone is caused by changes in the reed, tube, wind-pipe and mouth-piece. In grave sounds the chordæ are longer, thicker, and less tense, separated by a narrow eliptical slit; the tube is longer and more capacious, and the wind-pipe and mouth-piece become larger. The reverse occurs in acute sounds.

9th. The false voice depends sometimes on the incorrectness of the ear; it is caused more frequently by want of proportion between the tube and reed.

10th. In the falsetto the voice does not appear to resound in the nares, the tube is conical, and has the least possible dimensions.

Observations upon abscess of the right lung, together with some reflections upon this affection; communicated to the Royal Academy of Medicine, by M. Martin Solon, *adjunct member.*

——— Bernard, æt. 45, entered the hospital of Bearyon, April 13th, 1831. She was much emaciated, but the color of her skin did not indicate any serious organic disease. She complained of having for a long time felt pain at the pit of the stomach, of loss of appetite, and difficult digestion, together with nausea, but without vomiting. We believe these symptoms indicated a chronic irritation of the stomach. Upon examining her, we discovered that the right breast had been excised, together with the middle finger of her right hand. She said the former took place 12 or 15 years before, in consequence of a cancerous affection, and that she had since experienced no inconvenience from it. The finger had been recently amputated in consequence of some injury. We thought the emaciation might be occasioned by some cancerous tumors, but an examination of the thorax did not disclose any. The Epigastrium was painful on pressure, but no tumor could be felt. (20 *leeches on epigastrium, fomentations* *on the belly, tisane of gum, emollient injections.*) April 15th. Pain in the epigastrium continued, (12 *leeches to the pit of the stomach.*) On the following day, the patient was better. The pain and heat in the epigastrium was nearly dissipated. We yielded to the wishes of the patient, and gave her a little milk, together with some milk porrage. Emollient drinks and soothing cataplasms were continued. For several days, her digestion was good, and she appeared on the recovery, till the 22d of April, when she was seized with cough, pain in the right side, with sanguinous expectoration. The blood was so pure it might have been mistaken for a hæmoptysis, if the developement of fever, together with some râle crêpitant, had not indicated phlegmasia of the parenchyma of the lungs. The slightness of this affection, together with the emaciation of the patient, induced me only to prescribe fifteen leeches over the seat of pain. (*Diet, pectoral drinks.*) The following morning, the pain was lessened, but there was oppression, with a brownish expectoration, and intense fever. (*Bleeding from the arm.*)

April 24th. Third day of the pleuro pneumonia. Respiration a little improved; brownish expectoration.

4th day—Pain in the side more severe, fever more intense. (*Two porringers of blood taken from the arm*, 18 *leeches, emollient cataplasms to the side.*)

5th day.—Sensible melioration, expectoration rusty.

6th day.—Return of oppression; continuance of fever; the bloody evacuations and weakness of the patient forbade further depletion from the arm. Over a tumor which was now distinguishable in the side, 15 leeches were applied.

7th and 8th days. Respiration more easy; expectoration less, and less rusty; fever diminished.

9th and 10th.—Continuation of the melioration; spit yellowish; desire for food, which was granted, mucilaginous drinks continued.

11th day.—May 2d. Mucous expectoration, slightly tinged. This melioration joined to the gradual diminution of the cough, and freedom of respiration, together with the partial disappearance of the tumor, gave us some hopes of a cure. (*Broth, milk, pectoral drinks.*)

12th day.—Expectoration loose, frothy, infiltrated, discolored, and adhering to the vessel.

13th day.—Quiet, some vermicelle was given her.

14th day.—As well as preceding day, except that she had a feeling of oppression in epigastrio, with general weakness, she was allowed nothing but milk.

15th day.—Extreme sinking, paleness, feeling of weakness augmented, pulse small, compressible and frequent, great pain in the right side, mucous expectoration. (*Broth, blister on right side.*) The weakness continued to increase, and the patient finally sunk.

Upon an examination of the body 24 hours after death, we found not far from the cartilages, towards the fifth and sixth ribs, an adhesion of the costal and pulmonary pleuræ, circumscribed, nearly circular, and one and a half inches in diameter. In tearing this, in order to raise the lung, a cup full of whitish, inodorous, thick, creamlike liquid escaped. Astonished at finding a phlegmonous pus between the adhesions of a serous membrane, we examined the lung, and ascertained that the adhesions involved the middle lobe to the size of a five franc piece, and that the corresponding costal and pulmonary surfaces were covered with psuedo membranes, but that in the centre of the pulmonary surface, there was a perforation establishing a communication between a pulmonary excavation, and this accidental pleuretic cyst. This excavation was in the middle lobe of the lung, and was capable of containing two or three ounces of liquid and enclosed a quantity of pus, similar to that spoken of above, except that it was thicker and more red. It was traversed by ligamentous filaments, easily torn, which were probably the remains of vessels proper to this part of the lung. In a few places, the surface of the cavity had the smoothness of a mucous membrane, and in nine-tenths of its extent, was formed of reddish substance, softened and infiltrated with purulent matter. Two spots of five or six lines in extent, were formed by the pleura, which was yellow, and appeared to be converted into an eschar, ready to separate from the rest of the membrane, and give vent to the matter contained in it. One of these spots corresponded to a point above the pleuretic perforation, the other was contiguous to the pericardium, in such a way, that between the two, the pulmonary parenchyma was entirely destroyed. The remainder of the right lung was healthy; a silicious calculus, of the size of a grain of hemp-seed occupied its summit. The left lung was in a state of integrity. Upon raising the liver, we found between it and the stomach a clot of black blood, of some consistency and very fetid. It came from the stomach, the small curvature of which was destroyed by an enormous cancer. When this organ was cut open in the direction of its great curvature, it was found to be filled with a clot of black coagulated blood, weighing five or six ounces, extremely fetid. Upon raising this clot, a vast cancerous ulcer was discovered, which had destroyed part of the small curvature, together with the superior and inferior face of the stomach; its circumference was formed by the adhesion of this viscera to the neighboring organs, and at its base could be seen a portion of the liver, the pancreas, and the spleen, which had participated in the cancerous affection. This surface was in a state of ramollisement, and infiltrated with blood; above it, the various organs were of the consistence of lard; its proper vessels, as well as those of the other organs, had participated in the alteration, so that it was impossible to say if the hemorrhage had proceeded from it or from the spleen. The duodenum, together with three or four feet of the jejunum, were distended with this clot, which was moulded upon their internal face, presenting alternately angles and depressions, corresponding to the valvula conniventes, and the ridges which separated them.

The quantity of blood contained in the digestive ways was estimated at more than two pounds; the other organs were exsanguinated, and presented no trace of cancerous disposition.

It will without doubt appear astonishing, that so large a cancer, implicating so many different organs, should not have manifested its existence during life. It is, however, easy to give a reason for it; its deep situation in the abdomen prevented its being felt by the hand, the scirrhus state of the last two inches of the œsophagus had so contracted it, as to place an obstacle in the way of the patient's vomiting; whilst the integrity of the pyloric extremity of the stomach prevented her from feeling much nausea.

The ancients confounded the several lesions of the lungs; they believed that abscesses were easily formed in them, and gave them the name of vomica, because they supposed the patients often relieved themselves by vomiting. The more exact researches of pathological anatomy have however demonstrated to modern physicians, that these abscesses are by no means common. Some have entirely denied their existence. It is not our intention to enter into a history of these abscesses. In order to show how rare they are, Laennec reports in his excellent *Traité de l'Auscultation*, that out of several hundred peri-pneumonic subjects which he had examined, in a space of more than twenty years he had but five or six times seen collections of pus in an inflamed lung. Professor Lallemand, of Montpelier, in the 65th volume of the *Bibliothèque Médicale*, has published four cases of abscess developed in the lungs. In the year 1823, M. Honore presented a remarkable case to the academy. In the Hotel Dieu, in 1818, I observed, for the first time, an abscess of the lung, which terminated favorably by vomiting on the 24th day of the pneumonia. The case we have published will augment the number of those, which incontestibly prove the developement of abscess in the parenchyma of the lungs. In fact this could not have been a softened tubercle: it is true that the right breast of the patient had some years before been excised for cancer, and the abscess occupied the right lung; but we have stated, that on the day of her admission, the thorax was sonorous, and it is well known, the right lung is more frequently attacked with inflammation than the left. The presence of an enormous cancer in any other organ might have given rise to the same opinion; but the nature of the liquid contained in the abscess, together with the appearance of its parietes, did not admit a doubt of its being of the same nature as those developed in the middle of the cellular tissue.

Should not the nature of the expectoration have caused us to suspect the presence of pus? although this expectoration was, in the commencement, more sanguineous than usual, yet, during the latter part of the disease it became as mucous as in simple bronchitis. It is well known how the color of the expectoration, in pneumonia, is varied by the proportion of blood. Out of 41 cases, I have twice found this reddish expectoration without the developement of abscess in the lungs. One of these patients was bled largely, notwithstanding the long continuance of his sickness and the debility of his constitution, and he recovered. The expectoration can only serve as a diagnostic of abscess, when the pus finds a passage through the bronchial tubes.

Abscess of the lung can not be detected where several of the lobes of this organ are affected with inflammation, because death takes place before a cavity has been formed, and its tissue is found infiltrated with pus. Sometimes the centre of these infiltrations are in a state which Andral has described under the name of *ramollissement gris*, and which would, but for death, soon be converted into a purulent cavity. The same thing does not take place in partial or lobular pneumonia, because there is a sufficiency of the parenchyma of the lung in tact to preserve life, and the inflammation terminates in suppuration. The various observations upon pulmonary abscesses, cited by Laennec and Lallemand, were made upon subjects attacked with partial pneumonia, where the abscesses were at first closed, and then found vent for themselves, constituting the open and closed vomicæ of Van Swieten. This circumscription of the lesion enables us to imagine the cure of pneumonias, terminating in suppuration and gangrene, and augments the interest attached to them.—When these vomica exist in the vicinage of the bronchial tubes, these latter form a passage for the safe evacuation of their contents, and may it not be the same in other cases. In the description we have given of the purulent cavity, it was seen that a perforation was just ready to evacuate it either into the region of the pericardium, or that of the anterior mediastinum, which would undoubtedly have been followed by fatal consequences. Another portion of the pleura forming part of the parietes of the abscess, was on the point of being detached, and would have permitted the escape of the pus into the cavity of the thorax, giving rise to emphysema; but it is probable, before separating, it would have contracted salutary adhesions with the costal pleura, thus preventing the effusion. This was the case with the pleuretic eschar placed below; the removal of which established a communication between the cavity in the lung and the accidental cyst formed by the adhesions of the pleura. This removal probably took place on the evening of the patient's death, when there was so great an increase of the pleuretic symptoms. The presence of pus on the surface of the plerura had produced an irritation of this membrane with adhesions, which had prevented it from being effused throughout the whole serous cavity. At a future period, a favorable passage might have been made through the parietes of the thorax, thus giving the patient a chance of recovery, if the cancer, with which she was afflicted, had not, by the hemorrhage it occasioned, rendered her death as inevitable as it was unexpected.—*Archives générales de Médecine*, 1831.

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HYPOSPADIAS.

SURGEONS but rarely endeavor to remove the anormal condition of the verge styled hypospadias, whether resulting from disease or original mal-formation;—when the urethral perforation is immediately behind the glans, they say, it neither prevents the discharge of urine, nor impedes the generative process; and when situated farther back, the chance of establishing an artificial passage is improbable. That such opinions are fallacious, I shall now endeavor to prove.

Case 1.—In April, 1822, a gentleman labored under gonorrhœa, to which succeeded an abscess immediately below and behind the glans, that burst after a few days, and about one-third of his urine passed through it. In this state he continued for a few weeks, when he sought my opinion on his case. On examination I found that the opening easily admitted a common silver director, and pursued an oblique course for about half an inch, before it communicated with the urethra. He objected to the treatment I proposed; therefore I did not again speak to him until the ensuing August, when he informed me, that his case had become troublesome, and rendered him very unhappy, as not only the greater part of his urine, but the semen passed through the fistulous opening. At my suggestion he visited the late Professor Todd with me, who on examination found, that in addition to the perforation, all that portion of the urethra anterior to it had become strictured. Mr. T. recommended the contracted portion of the urethra to be dilated; then, a portion of a full sized bougie to be introduced daily, for an inch beyond the urethral orifice of the fistula, and retained there; a compress of calico an inch in length and three quarters in breadth, moistened in a solution of the sulphate of zinc, to be applied over the trajet of the fistula, and fixed by a narrow roller of the same material, thus binding the penis, bougie, and compress, together. These directions I faithfully executed with this exception, that instead of a bougie, I used a silver tube two inches in length, sufficiently thick to permit its being rounded off in the manner of a sound at its distal extremity, and to resist the pressure of the roller. Thus he was enabled to discharge his urine without withdrawing the instrument. In a fortnight the urethra was sufficiently dilated to admit the tube, and on the twenty-third day after its application, the fistula had healed.

Case 2.—In the year 1827, an officer was affected with phagednic ulceration of the glans, which extended backwards and opened the urethra an inch from its orifice. The ulcer healed under appropriate treatment; but the opening in the urethra continued, and the greater party of his urine flowed through it. As I had attended him for his primary disease, he requested I would endeavor to remedy his present disagreeable state. The opening was direct, and about the size of a barley-corn; and all that portion of the urethra anterior to it was very much contracted, particulary at the extremity, where the previous ulceration had committed extensive ravages.*

I proceeded to remove his disease by dilating the contracted urethra, which being accomplished, I introduced a silver tube, as in the preceding case—fixed it steadily by a proper bridle, and then applied the actual cautery to the edges of opening. Violent inflammation set in, but under rigorous treatment soon subsided, good suppuration ensued, and a fine crop of granulations sprung up and obliterated the orifice. His recovery was rapid and perfect.

Case 3*d*. Mrs. Burns, a laborer's wife, in July, 1827, brought me her infant, aged three months, who had an opening communicating with the urethra, below and behind the glans, the portion of the canal anterior to it, being very much contracted. She informed me that, for some days after birth, the infant voided his urine with great difficulty, and that a collection of matter formed, and gave rise to the preternatural opening, through which the urine was freely discharged. I pursued the same plan of treatment in this, as in the last case, and with the happiest success.

Case 4*th*. A disbanded sergeant-major was born with an imperforate glans, and the urethra opened immediately behind it.—

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* When I gave up my attendance previously, I directed him to use a bougie, as I feared contraction; but he neglected my advice.

He was a married man and had no children. I perforated the glans with a trochar, carefully avoiding the urethra, until the point of the instrument had passed the site of the opening; then I introduced the silver tube. Thus the opening was rendered valvular, and consequently so nearly obliterated by the pressure of the tube that but little urine flowed through it. When the inflammation created by this operation had subsided, I applied the actual cautery, and in about two months from the commencement of his treatment the preternatural orifice had healed. I then dilated the new canal with bougies, and he afterwards successfully exercised his procreative powers.

Case 5th. In the summer of 1826, Staff Surgeon Hume rejected a recruit, in consequence of hypospadias; the urethra being imperforate for three inches. As I was present, I proposed remedying the mal-formation; he acquiesced, and I proceeded as follows:—With a trochar five inches in length, made expressly for the purpose, I perforated the corpus spongiosum in the course of the urethra, taking care to enter the canal below the preternatural orifice. The stilet was then withdrawn, and a gum-elastic catheter introduced into the bladder, through the canula. When the severe inflammation which followed, had beensubdued by active treatment, I applied the actual cautery, to the periphery of the original opening; healthy granulations formed, and by the aid of the nitrate of silver, and compression, it soon healed. Bougies were then employed to dilate the canal, and so perfect was the cure, that within twelve months, when inspecting a detachment for embarkation to India, I detected my friend, who in the interim had enlisted, as he was determined on being a soldier.

Sanson and Begin, in their additions to the *Medecin Operatoire*, of Sabatier, mention a case similar to this, on which Dupuytren operated successfully. "The child, Louis, (p. 435—6.) had, at the root of the verge, a very small opening, through which the urine was expelled with great difficulty. The extent of the organ from this point to its extremity, was about two inches; it was imperforate, and presented no traces of a canal. The parents of the child were very anxious that the generative functions should not be lost, and, at their instance, M. Dupuytren resolved to perform the following operation.—A small trochar, constructed for the purpose, was introduced into the anterior and inferior part of the glans penis, and passed down to the fistula. The canal thus formed, was then cauterized with a fine red-hot iron. The inflammation which accrued was so great that gangrene threatened, but was prevented by active treatment; the eschars were detached, and healthy suppuration established; a gum-elastic catheter was introduced through the artificial canal into the bladder, and retained there, thus giving a free passage to the urine. After three months, the fistula at the root of the verge, which had been cauterized with the nitrate of silver, cicatrized, and all the urine was discharged by the new canal, which still continued to secrete a small quantity of pus. The tendency which this passage had to contract, was prevented by the continual use of sounds and bougies, which were employed until a complete cicatrization of its parietes had taken place. For ten years M. Dupuytren heard nothing of the child, from which he concluded that the operation had been completely successful.—*Editor*.

CASE OF THE YAWS.—BY DR. CHAS. A. VAN ZANDT.

The subject of the following case was a negro man, a cook on board a vessel from the West Indies. He stated that one day previous to his sailing for New-York, he had slept on a bed in which a negro had died with the Yaws. After he discovered what he had done, he endeavored to prevent any evil consequences by keeping his body under the continual operation of purgative medicines. The disease did not make its appearance until his arrival in New-York, after which it gradually assumed its distinctive character. For the first few days there was a slight febrile action, succeeded by small pimples not larger than a grain of mustard-seed, after which they gradually enlarged and became protuberant pustules. Those which appeared around the face, axilla, groins, and anus, were considerably larger than on any other part of the body. Some of the earlier pustules dried off and others appeared in different places, attaining the size of a sixpence, and taking on a fungous character. The hair upon his breast from a jet black turned to a greyish white color. At times he complained of extreme pain in the head, back, and loins, extending quite to the lower part of the sacrum, when for a short time, his eyes would become inflamed and swollen, his pulse full and quick, with strong pulsation of the temporal arteries, loss of appetite and partial delirium. This state of things continued for nearly four months, before I succeeded in arresting the disease. One crop of pustules followed an other in regular succession. When I considered my patient as nearly convalescent, I discovered upon the soles of his feet several tumors, or indurated swellings, which were very painful. These no doubt proceeded from the great thickness of the skin, which the Yaws were unable to penetrate. There remained after all the other pustules had disappeared, one large and one small Yaw, which in the West Indies are called "Master Yaws." These were situated upon the thigh and required a great deal of time and attention for their removal.

Treatment.

My first object was to lessen irritation and determine to the surface of the body.

℞ Pulv. Contray. gr. xv.
Gum. Camph. gr. iij.
Sulph. Sub. ʒ j.

This was divided in two parts, and one given morning and evening, but without the desired effect. I followed it the next day with

℞ Pulv. Guiac, gr. x.
Pulv. Antimonii, gr. ij.
Sulph. Sub. ʒ j. given as above.

This prescription produced the anticipated diaphoresis, and I ordered a decoction of simple Sarsaparilla, sweetened with honey as a common drink—warm bath three times a week—ablutions with Castile soap and warm water—vegetable diet and moderate exercise about the room, which was kept tolerably warm. In the second stage, when the eruptions began to dry off, I exhibited

℞ Oxy. Muriat Hydrarg. gr. iij.
Proof Rum, ℥ iv.

One table spoonful morning and evening in milk, followed by the sarsaparilla in combination with the other woods. When the scabs came off I omitted the mercury, but continued the sarsaparilla with small doses of the neutral salts. When the Yaws became numerous and the patient weak and oppressed, I found the following very useful.

℞ Pulv. Guiac. ℥ ij.
Gum. Camph. ℥ ss.
Tart. Emet. gr. x.
Pulv. Opii. ʒ ij.
Mad. Wine, ℥ vj.
Proof Rum, ℥ xivj. one table-spooful every night.

The last or Master Yaw became a foul ill-conditioned ulcer, which I dressed with

℞ Hydrarg. Sulp. Rubri. ℥ j.
Adep. Suillæ, „ viij.

I directed him to immerse his feet in weak lye, as warm as he could bear it, after which the Yaw was pared off as near the quick as possible, the feet wiped dry and sprinkled with the following powder:

℞ Oxymur. Hyd.
Hydrarg. Sulp. Rubri.
Am. Sulph. Cupri. ʒ j.

The feet being oiled, this was bound on and continued two days, after which I applied in the same manner the following:

℞ Oxymur. Hydrarg.
Hydrarg. Sulp. Rubri. aa ʒ j.
Adep. Suillæ, ʒ ss.

Great attention was paid to cleanliness. After his convalescence, I ordered light animal food, with the decoction of woods.

During his illness he had passed some Ascarides, for which I gave him the proper remedies. He gained strength slowly, but at last was restored to perfect health.

CASE OF SPASMODIC CHOLERA.—BY DR. COLEY.

CASE.—James Robertson, æt. thirty-nine years, by trade a jeweller. I was summoned to attend this man on Tuesday evening, the 27th Sept., about 10 o'clock, and found him in a state of alarming exhaustion, from an attack of vomiting and purging, that had commenced on Sunday afternoon last, and continued with more or less severity to the present time. I was enabled to learn that on the Sunday after dinner, he felt an inclination to stool, and that on reaching the privy, he was seized with a severe vomiting of a dark-colored fluid, which continued during the whole of the night. He was supplied with full two quarts of vinegar and water, to satisfy the immoderate thirst that oppressed him, and under the idea as he expressed himself, "that his sufferings arose from acidity of stomach," he took a large dose of magnesia, and cream of tartar.

On Monday morning, the 26th, the purging still continued throughout the day, but the vomiting had ceased; his diet consisted of two quarts of butter-milk, and a little bread: towards the evening he felt considerably better, the purging having become less frequent, although as he noticed, the stools became white and of a slimy nature. He did not sleep during the night, and arose on Tuesday morning weak and exhausted; the purging was but trifling throughout the morning, and after a dinner of potatoes, he went out; feeling fatigued, he drank a gill of port wine, and returned home; about 6 o'clock in the evening the purging recommenced, and shortly afterward on going to the privy he fainted from excessive weakness; upon his recovery, whilst in the privy, the vomiting returned, together with the purging to a most distressing degree, and so continued until nearly half past 9 o'clock.

10 o'clock.—At that hour he was suddenly alarmed by violent cramps in the toes, which bent and retained them towards the sole of the foot, for several minutes together; after enduring three or

four of these attacks, and finding them extend to the ankles, he for the first time requested that medical aid might be procured, and as I was the nearest physician to his abode, I was immediately sent for. I reached his bedside at the moment when he was suffering from a renewed attack of spasm; he was with difficulty retained in his bed by three or four friends, and his toes, feet, and legs were in a state of extreme spastic contraction; on applying my hand to the calves of his legs, it appeared as though balls of some hard substance were inclosed by the integuments, and following each other from the ankles to the ham, the toes being at the same time bent towards the soles of the feet; this spasm lasted about five minutes. The condition of the sufferer was most alarming; not a pulse could be detected in the radial or temporal arteries, or in the region of the heart; the surface of the body was as cold as marble, the nails of a livid hue, his eyes were starting, his hair and face bedewed with cold perspiration, the nose contracted, and its alæ tremulous, and an intense anxiety pervaded his countenance. The five last evacuations he had passed, resembled a mixture of flour and water, and did not possess the slightest tinge of color.

I immediately prepared the following mixture:—

Misturæ Camphoræ	℥ vj.	
Spiritus Ammoniæ,	ʒ iss.	
Tincturæ Opii,	ʒ ss.	
Spir. Menthæ,	ʒ ij.	M.

which I commenced administering by two table-spoonfuls, directing one table-spoonful every successive half hour. At the same time ordering the application of hot water to the feet and legs, and afterwards hot bricks to the soles.

Half past 10 o'clock.—The stomach rejected the second dose of the above mixture, and the spasms became more frequent and violent, extending up the thighs as high as the groins, and likewise affecting the muscles of the left fore arm; during my absence, his friends, (at his own request) had withdrawn his legs from the bed, and *were busily employed in pouring cold water over them.* This absurdity I of course restrained, directing instead the use of the hot bath, and the application of flannels wrung out of hot water to the abdomen and thighs. Still no pulsation could be felt, and the excessive coldness of the surface appeared increasing. I therefore directed a cautious use of brandy and water, administered at intervals of a quarter of an hour, giving the mixture as before.

11 o'clock.—The spasms still continued in all their former violence and neither warmth nor pulsation, had returned to the surface or arteries. I learned that since I had seen him, he had fainted, and upon his removal from the bed to the night chair, he again

swooned, but only for a few moments, as the violence of the spasms, quickly restored him to consciousness. The medicine had however rested on the stomach, and I directed its punctual continuance, even at short intervals, still giving the spirit and water. I also applied a mustard poultice to the sole of each foot. Upon the last attempt at evacuation nothing was passed, although the inclination was still experienced.

Half past 11 o'clock.—Two doses of the medicine had been given, and upon my arrival I gave a third; the spasms had somewhat decreased in violence and frequency, and upon examination, I detected a slight fluttering of the pulse, and imagined that the surface was divested of a little of its former chilliness. Having attended as much as possible to the comfort of my patient, I left him for the night, with directions to be called, if the slightest change in his appearance should take place, or the former violence of the spasms be renewed.

Wednesday morning, 8 o'clock—I was agreeably disappointed in not having been disturbed last night; on my visit this morning, a remarkable change had taken place; the pulse was restored, beating 52 in the minute, and with tolerable force; the surface was warm, and slightly moistened with perspiration, the cramps had altogether ceased since between one and two o'clock, the evacuations still frequent, were tinged of a yellowish brown color, the vomiting had altogether ceased, and the countenance had lost the anxiety that so frightfully distinguished it the previous evening. He had taken the whole of the mixture prescribed last evening. With a view of restraining the evacuations I prescribed the following mixture:—

℞ Magnesiæ Carbonatis,			
Pulv. Rhei,	aa	ʒ	iss.
Tincturæ Opii,		ʒ	ij.
Aqua Menthæ Piperitæ		℥	viij.

Fiat mistura de qua, cochlearia duo majora statim sumenda, et repetatur tertia quaque hora.

12 o'clock.—The condition of the patient has fulfilled the promise of the morning. The medicine has evidently acted upon the bowels from the color of the evacuations, and the stools have decreased in number. Pulse 60. Skin warm, and the mind perfectly tranquil.

5 o'clock.—But two stools since 12 o'clock, and those of a natural color; pulse 72. Skin moderately warm, and patient altogether comfortable. The thirst previously complained of, has ceased, and the light food to which he is restricted is eaten with a slight appetite.

Remarks.

Had the case which I have narrated, occurred in any of the countries of Europe, little doubt could have been entertained, that it was an example of the disease termed Indian or Epidemic Cholera. So many of the symptoms that are present in that fatal malady, were recognized in the case of my patient, that I am persuaded little distinction, if any, could be drawn between them. Violent cramps of the lower extremities, gradually extending to the trunk, vomiting and purging, the evacuations characterized by an absence of biliary matter, and by their peculiar appearance, as though composed of rice or flour and water, the coldness of surface, the sinking of the pulse, the lividness of the nails, the shrunk and pallid appearance of the countenance, together with the indescribable anguish imprinted on it, are all signs common to the Indian Cholera, and remarked in the case of Robertson. It is true that the latter was not distinguished by the oppression and burning heat in the stomach, that accompanies the former, nor were the salivary or urinary secretions disturbed; but with these exceptions, the history of the case would almost realize the description given of the scourge of India.

A great deal has been advanced in favor of bleeding in Cholera, in order to diminish the great excitement prevailing, as evinced by the continuance of severe spasm, but, surely no one would act with so much temerity as to employ the lancet in a case similar to Robertson's. In the first place, from what vein would a physician procure blood, when the system is so prostrated as to stay the pulsation of the heart much, and prevent its action being ascertained by the nicest examination? In the second, would he bleed with a cold surface, certainly not occasioned from congestion but debility, and when the patient was only recovering from one fainting fit, again to relapse into syncope? Should cholera approach in any form unattended by so great a degree of debility as immediately to threaten the existence of the patient, should the vital fluid be pulsating in the arteries, with more than ordinary, or even with ordinary violence, the propriety of bleeding may be admitted: but when we see an individual prostrated by the stroke of disease, stumbling, as it were, between life and death, the power of the heart so languid, that the circulation is retarded in the extremities —to take blood, is to hasten destruction. The call is then for stimulants and anodynes, which however apparently incompatable, exercise an immense influence over the system, when it is reduced to so low a state as has been described. The stimulant serves to rally the fleeting powers of life, acting by its diffusibility immediately upon the system through the agency of the stomach, which the anodyne tends to relieve that irritation which is sufficiently powerful to exhibit itself, even in the debilitated condition to which the sufferer is reduced. The electeras of warm water, flannels, hot bricks, and cataplasms aid in the objects intended by the internal remedies by recalling the circulation, and so restoring the balance that has been so greatly disturbed.

It must be admitted, that the propriety of my practice in this case was justifiable, when its success is so apparent, and as we daily learn, from the most trifling occurrences around us, the instance I have given of the treatment of the disease, known by the prevalence of spasm, vomiting, and purging.* When debility and exhaustion are its principal accompaniments, may not be thrown away, upon my professional brethren.

Where signs of congestion in a vital organ appear, or when excessive irritation is indicated from the state of the skin and the pulse, the lancet may safely be employed; but to use it under the circumstances described, and as recommended by some authors, is to exercise the same discretion that would be apparent, in bleeding a man after concussion of the brain, before re-action had commenced.

Experiments made for the purpose of determining the action of the nitrate of potash; distilled laurel water; distilled water of the bitter almonds; hydrocyanic acid and the root of valerian.—*By* J. CHRIST. GOTTFRIED JÆRG, *Professor of Midwifery in the University of Leipzig.*

Being deeply impressed with the obscurity and uncertainty which prevailed in that part of the Materia Medica, treating of the operation of medicines upon the animal economy, and convinced of the necessity of having more light upon the subject, M. Jærg, in the year 1822, formed a society, almost entirely of young physicians, for the purpose of determining by direct experiment, the action of the principal medicines upon the human body in a state of health. This society consisted of twenty-seven persons; twenty-two of whom were physicians, or students of medicine—the youngest being 21 years of age, and the oldest, M. Jærg, 45; two of his sons, one aged 16, the other 14; and three females, one aged 45, the second 18, and the third 12. These persons were all in good health and of regular habits which they did not depart from during the course of experiments. Their diet was not changed, and they continued the use of coffee, wine, and beer in moderate quantities. The two sons of M. Jærg drank nothing but water, and although of small stature, they were strong and robust. An exact account was kept of the doses administered to each of them, together with the symptoms and phenomina which resulted from them.

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* It is absurd to call this disease "cholera," when the derivation of the word is considered, and the circumstance remembered that no biliary matter can be detected in the evacuations.

1*st. Experiment with the pure nitrate of potash.*—This medicine was administered to eight members of the society, at first in small quantities, fifteen grains being taken in white sugar, twice every day, it was then rapidly increased to a scruple morning and evening, then to half a drachm, and in one instance the experimenter commenced with a drachm in an ounce of water, and augmented it to two drams at a dose.

M. Jærg's conclusions from these experiments were, that the nitrate of potash acted as an excitant to the kidneys, intestinal canal and the skin. An augmentation of the urinary secretion, modified in its chemical composition was the result of its action on the kidneys. The diuretic power of this medicine was very evident in all those who took it. Its stimulating action upon the digestive canal was manifested in the first place by an augmentation of the salivary secretion, followed by dryness of the mouth and œsophagus, with more or less thirst; great hunger and pain in the stomach, resembling inflammation; by eructations, and when taken in large doses by vomiting, colic, borborygmus, liquid stools, and sometimes when the medicine had acted particularly upon the kidneys or the skin, by constipation. This action sometimes extended to the large intestines, producing frequent tenesmus without evacuations. Its action on the skin though frequent, is far from being constant. When this medicine was exhibited in moderate doses it was followed by no bad consequences, while vertigo and headache succeeded to its administration in large quantities. After the exhibition of the nitrate of potash a feeling of coldness was experienced in the mouth and œsophagus, and sometimes in the stomach, which continued for several minutes, but was followed by a re-action proportionate to its intensity. Whenever the pulse was diminished, the re-action was in a direct ratio to it. These secondary effects shew clearly that this medicine cannot be looked upon as an antiphlogistic. Its stimulating action upon the intestinal canal, the skin and the kidneys, clearly corroborate this assertion, Every substance which increases the activity of the secreting organs, disposes them to inflammation, if exhibited in large doses. The nitrate of potash will undoubtedly be included in this proposition. Examples of inflammation of the stomach and intestines produced by its excessive use are not wanting to prove this point. M. Jærg says, "without entering into the question whether the nitrate of potash acts upon the digestive organs in a chymical or a dynamic manner, a fact which it is impossible to ascertain in the living body, I maintain that it should no more be classed with the antiphlogistics than arsenic itself; on the contrary, I insist that it will augment the activity of the three great secretory apparatuses, and to a certain degree the sensitive and circulatory ones. I am therefore persuaded that its continued exhibition must be highly injurious to the digestive organs."

It has been proved by experience, that when a medicament is taken in a disease, which has the effect of producing a morbid change analogous to that which characterises the affection for which it is taken, an augmentation of the symptoms is the consequence, and this obtains though the medicine be exhibited in small quantities. From this it follows that the nitrate of potash is contra-indicated in inflammatory affections of the abdominal organs; and when we recollect that diureties by themselves stimulate the kidneys and the genital organs, and that these effects are produced by the nitre, we will easily be convinced they are highly improper in inflammations of the genito-urinary apparatus. From its action upon the cutaneous surface, it should not be employed in inflammations of the skin, unless as a derivative upon the kidneys and intestinal canal.

The purgative action of the nitrate of potash is too uncertain for it to be advantageously employed as a laxative, besides which, we possess many others of this class of medicines whose actions are constant and well known. As a diuretic it is improper in the greater number of dropsies, because we have much better medicines, added to which its continued exhibition might injure the digestive organs. Nevertheless, in certain active dropsies, advantage may be derived from its prudent exhibition. As a general diaphoretic its action is too uncertain for it to be extensively employed. Nitre manifests its medicative power when its acts solely as a stimulant to the gastro-intestinal canal, and the genito-urinary apparatus, without producing any secondary effects. The best results are therefore produced from it, in affections of the brain, of its membranes, of the spinal marrow, of the throat, and in a certain degree of the thorax. As in moderate doses it does not act upon the cerebro-spinal system, it is indicated in the encephalitis of children, and might with much propriety take the place of calomel, a medicine which has done an infinity of mischief. In many cases it might advantageously be administered as an emmenagogue, as was proved by M. Jærg upon some females of the society. In the greater number of cases, a dose of three to five grains will increase the activity of the urinary and digestive organs, but sometimes it must be carried to twice that quantity to produce this effect, which is announced by flatulence, and frequent desires to urinate.

2nd. *Experiment with the laurel water.*—The water of the cherry laurel, employed in these experiments was prepared according to the Saxon Pharmacopea (of Dresden, 1820,) in this manner. Take the fresh leaves of the cherry laurel, cut up lb. j. rectified spirits ℥ j. water lb. vj. distill so as to obtain three pounds of liquid.

This liquor was administered to two members of the society in doses progressively increasing from five to twenty-five drops, and then from ten to a hundred and two drops. Its action upon different individuals varied very much, also, according to the different doses in which it was administered. Thus one person would require four times a greater quantity than another to produce the same symptoms. The principal effects obtained from the exhibition of this medicine, were, heavy poignant pains in the head, particularly its anterior part, heaviness of the head, with lassitude of the whole body, a slackening of the pulse, a desire to sleep, a feeling of extreme weakness in the limbs, particularly in the thighs, torpor of the intellectual faculties, a disagreeable tickling sensation in the larynx, similar to that produced by an inflammation of its mucous membrane, cough, together with a marked increase of the secretion of the mucous membrane of the respiratory organs. The diminution in number of the pulsations was always in proportion to the intensity of the headache. In small doses its action was not prolonged more than two, three, or at most four hours, but when large doses were taken, the action was continued for six, eight, and sometimes as long as twelve hours. The irritation of the larynx and the augmentation of the secretion of its mucous membrane often remained for several days. The prussic acid, which is the active principle in the substance we are treating of, produces upon the cerebro-spinal system an almost instantaneous excitement, which is followed by a corresponding diminution of the nervous sensibility. This excitement of the brain is of too short a duration to be perceived either by observation or personal sensation, but its common effects, such as plethora and turgescence of the vessels, as manifested by the symptoms we have related, leave no doubt on the mind as to the class of medicines to which this substance belongs. From this it results that it should never be given in cases of inflammation of the brain, neither to persons predisposed to congestion of this organ. It is indicated in phlegmasiæ of the abdominal viscera or organs of generation, or when there is an increase in their sensibility without inflammation. But in certain affections of the genital organs of women, when their sensibility is much augmented, this medicine might be administered with some success. In inflammatory affections of the lungs, it would be highly injurious. In the first stage of scarlatina and puerperal fever it is contra-indicated from its favoring a metastasis towards the brain.

It is possible, says M. Jœrg, that the prussic acid which this medicine contains, might render it useful in inflammations of the peritoneum, bladder and uterus, by rendering the blood more venous, consequently less plastic, thus diminishing the tendency which these organs have to form adhesions amongst themselves.

From what we have said it is evident, that the administration of the water of the cherry laurel, from the prussic acid which it contains, requires even in the best indicated cases, such as spasmodic affections, the greatest circumspection on the part of the physician. It is certainly contra-indicated in all cases of spasms and convulsions dependant upon excitation of the brain, or a general or partial compression of this organ, produced by an engorgement of its vessels. On the other hand as it operates so differently upon different individuals, the greatest precaution is required in its exhibition. M. Jærg thinks it should be administered in doses varying from three to twenty drops, repeated according to circumstances, two, three, or four times a day; in some cases it may be augmented. It should be remembered that this preparation, if left open, is easily decomposed, and consequently loses its strength.

3*d. Experiments made with the distilled water of the bitter almonds.*—The distilled water with which these experiments were made, was prepared according to the Saxon Pharmacopea, in the following manner. ℞. bitter almonds, lb. j. rectified spirits, ℥ j. water, lb. 6. distill so as to obtain three pounds of the liquor.

This medicine was administered to seven members of the society, in doses successively increasing from five to forty drops for each person. From M. Jærg's observations he concluded that its operation was the same as the laurel water, though not quite so energetic, consequently that it might be administered under the same circumstances, but from its weak and uncertain action, he advises that it be banished from practice.

4*th. Experiments made with the hydrocyanic acid.*—(Prepared according to Vauquelin.)—This acid administered to four members of the society, in doses of from half a drop to three drops in an ounce of water, uniformly caused great pain and heaviness in the head, dryness in the back part of the mouth, together with a sensation in the throat similar to that produced by eating a great quantity of dry nuts. Experiments were also made upon several animals, such as crows, cats, rabbits, and frogs. It was proved by dissection of these animals, that the acid acted principally by decomposing the blood, which assumed a venous color, and accumulated in the veins and right cavity of the heart. M. Jærg examined with a microscope the mesentery of a living frog, in whose mouth he had dropped some of the prussic acid, and observed attentively the course of the blood in the veins and arteries for the six minutes which the animal lived. After the injection of the first five drops, the blood continued for several minutes to circulate regularly, and preserved its proper color. At the end of ten minutes, the velocity of the blood in the veins, was sensibly decreased, but this change did not take place in the arteries until eight or ten minutes later. Stagnation of the blood was at times observed in both the arteries and veins, but more frequently in the latter than in the former vessels. The blood in the veins, which at the commencement of the experiment was of a bright red, became five minutes after death of a livid violet color, in the arteries, on the contrary it lost its vermillion color and became almost white, at which time the calibre of these vessels was diminished, while that of the veins underwent no change. The fluid first stopped in the capilliaries, then in a few minutes in the veins, afterwards in the arteries, so that it was not completely arrested in the latter, until fifteen or twenty minutes after every trace of sensibility had disappeared. The same results were obtained from experiments on several other animals. From these facts, M. Jærg draws the following conclusions.

"The hydrocyanic acid acts upon the brain and nervous system in a very rapid and violent manner, but its effects are more prompt and more intense upon the encephalic nerves, than upon those of the ganglionic system. The momentary excitement of the brain is speedily followed by a diminution of its nervous action, and even by death. When this virulent poison does not produce instant death, it causes an inflammation of the trachea and larynx. Sometimes it seems to act upon the kidneys, and augments the urinary secretion."

"As the prussic acid acts by exciting violently the nervous system, particularly the cerebo-spinal organs, it will be easy to relate the various phenomena it produces in man and the lower animals. The excitation of the brain should almost instantaneously be followed by congestions of that organ. This state of plethora carried to a higher degree, should produce torpor, and a feeling of oppression and engorgement of the whole animal economy. The affection of the brain communicates itself to the whole nervous system, and diminishes its general sensibility, consequently all the functions dependant upon it experience a corresponding change. With the diminution of the nervous sensibility we would expect a decrease of the muscular force, and this takes place more quickly in the weak than in the strong muscles. For this reason, as the muscles on the back of the neck are much more powerful than those on its anterior part, the head will be drawn from before backwards. Moreover, as the prussic acid affects more speedily and powerfully the cerebro-spinal nerves than it does those of the ganglionic system, it follows, that life is preserved longer in the involuntary than in the voluntary muscles. Nevertheless, in these last the irritability is preserved longer in the strong than in the weak ones, and it is observed that the left cavities of the heart preserve their contractility of tissue longer than the right ones, and that the blood circulates in the arteries when it has ceased to do so in the veins. This accounts for the accumulation of the blood in the veins and in the right side of the heart, as well as for the vacuity of the great arterial trunks and the left side of the heart, but it does not explain the change of color in the blood."

M. Jærg endeavors to account for this change in the following manner:

"When the action of the nerves of the lungs is diminished, so that these organs are found paralysed, their functions will necessarily become deranged. Every one is aware that these functions consist of the production of a combination of the oxygen of the atmosphere with the venous blood. If therefore the respiratory movements become weak and irregular, the venous blood cannot undergo the change necessary to convert it into arterial fluid, consequently it passes almost unchanged into the left side of the heart. On the other hand, it will easily be conceived, that from the feeble action of the lungs, the blood not being completely expelled, must accumulate in them. This accounts for the uneasy sensations the animals manifested when they did not immediately die under the action of the poison. The open mouth, the deep and anxious inspirations, the cries they uttered, all indicated their agony, which was manifestly owing to the impossibility of the proper oxygenation of the blood. When the lungs possessed sufficient vitality, gradually to return to their normal state, the various phenomena disappeared and the animal was restored to health."

It therefore follows that the hydrocyanic acid produces death in two ways, first by a total and instantaneous extinction of the sensibility, consequently of life; secondly, by a paralysis of the respiratory nerves, or asphyxia. These two kinds of death are very different, consequently we should expect to find in animals killed by the prussic acid very different lesions. In the first case, the death is so sudden that it is almost impossible to find in the dead body any lesion. In several of the animals experimented on, the well known odor of the acid could not be perceived in the stomachs. This is a fact worthy of attention in medical jurisprudence. In the second mode, the most apparent lesion is the alteration which takes place in the blood; together with the distension of the brain and its envelopes, which some authors regard as the immediate cause of death.

M. Jærg is of opinion that when the hydrocyanic acid is indicated, the laurel water is a much better preparation, than that of Vauquelin. He says, it is contra indicated in the complaints of children, from the very great excitability of their brains. The manner of its administration should vary with the effects intended to be produced. If for example it is wished to diminish the frequency of the pulse, to modify the composition of the blood, so as to render it less plastic, or to combat violent abdominal or other inflammations, it should be exhibited in large and frequently repeated doses. If on the contrary it is merely intended to act on the nervous system as in neuralgia, small doses are the most useful.

From some experiments made upon four members of the society, with the hydrocyanic acid prepared according to Ittner and Brande, it was found that this preparation was much more active than M. Vauquelin's. Its proper dose is from one quarter to a whole drop.

5th. Experiments made with the root of the officinal valerian.—These experiments were made upon the greater number of the members of the society, with an infusion of the root of the valerian, in doses of two to eight drachms in four ounces of water, with the powder of this substance in doses of half a drachm to a drachm in an ounce of cold water, and with the tincture in various quantities.

The conclusions from these experiments were, that the valerian acted upon the brain and digestive organs as an excitant, but that this action was moderate and did not exceed certain limits. Its primative effects upon the brain were, serenity, gaiety and a disposition to exertion, but congestions were soon established in the brain, causing dullness and heaviness of that organ. The action upon the brain is not however very excessive, and is not usually followed by weakness and lassitude of body, nor by the somnolescence and torpor which generally succeed to a great excitement of that apparatus. The influence of the valerian upon the digestive canal is manifested by frequent eructations, fullness of the stomach, loss of appetite, flatulence, colic, tenesmus, and oftentimes by the evacuation of thick fecal matter. It also appears to affect the liver, and augment its secretions, as is proved by the nausea and bitter taste which succeeds to its exhibition. The urinary secretions are sometimes increased by it, but this as well as the augmentation of the cutaneous transpiration is very uncertain. In short, this substance produces an acceleration of the circulation, but when administered in very strong doses this acceleration is always moderate.

From the experiments of M. Jærg it appears that the valerian is a very uncertain remedy. In fact, in the greater number of instances it did not produce any apparent symptoms, sometimes it acted solely upon the brain, and at others upon the digestive canal. The infusion of this root appeared to direct itself especially to the head; the powder to the digestive organs. Taken in small doses its action was prolonged about four hours, in medium doses six hours, and when exhibited in very strong doses, from eight to twelve hours. Its action upon the head was of much shorter duration than that upon the digestive organs. He considers that half a drachm would be a small dose for an adult, a drachm a medium dose, and two drachms a large dose. If it be intended to act particularly upon the head, the infusion should be prescribed, if upon the intestinal canal, the powder should be preferred.

From what has been said, it will be seen that the valerian is contra indicated in all affections dependent upon congestions either of the brain or the abdominal organs, and that it can only be usefully employed as a stimulant, when there are no indications of inflammation. We are of opinion that it is a very deceitful medicine, and one which by no means merits the title of an antispasmodic, with which it has gratuitously been gifted.

Hooping Cough. On the pathology and treatment of Pertussis. By W. R. Whatton, *Esq., Surgeon, Manchester.*

I venture, without apology, to forward the following observations on pertussis. The disease has visited us in Manchester and the surrounding neighborhood, very severely, in the form of an epidemic, during the last three months, and the mortality has been correspondingly extensive. At such periods, when cases of any particular disease are frequent, valuable opportunities are afforded for its investigation, for the examination of remedies and their effects, and for necroscopic observations; and, as it behoves the practitioner to acquire his knowledge on any and every occasion, how and when he may, such opportunities ought not to be neglected.

An excellent paper on this subject, by Mr. Sandwith, of Bridlington, printed in the third number of the *North of England Medical and Surgical Journal*, has induced me to transmit these remarks, partly in corroboration of his judicious observations, and partly with the view of submitting my own opinions and experience to the test of examination.

By following the doctrines of Watt, and some other subsequent writers, who have lately, and so ably, inculcated the dependence of pertussis on bronchial inflammation, instead of classing it among nervous disorders, I am desirous of aiding in the endeavor to rout the abettors of the Cullenian opinions of its purely spasmodic nature, and of offering my feeble support to the new theory; convinced as I am, most forcibly, both of the excellence of its foundation, and of its consistence with every sound principle of physiological and pathological reasoning. The idea that "the proximate or immediate cause of pertussis seems to be a viscid matter, or phlegm, lodged upon the bronchia, trachea, and fauces, which sticks so close as to be expectorated with the greatest difficulty, and by its nature excites spasmodic coughing," ought long since to have been exploded and forgotten; and "the irritability of the stomach and mucous glands," so fondly advocated and acted upon by the spasmodic pathologists, will, I hope, be exchanged for the better notions of inflammation, irritation, and morbid secretion.

The writings of Dr. Watt, Mr. Alcock, Dr. Hastings, and others, demonstrate, incontestably, the highly-inflammatory appearances of the mucous membrane of the bronchial tubes, after death, in fatal cases of pertussis, and my own dissections have always tended to corroborate their remarks. The membrane of the glottis and larynx, and of the trachéa and divarications of the broncht, is generally found highly inflamed, exceedingly vascular, thickened, and of a dull-red color; frequently coated with frothy puriform secretion, in such quantities as to impede entirely the passage of air, and occasionally studded with ulcerations.

I have observed, however, that the substance of the lungs has, in some instances, been more affected than the bronchial tubes themselves; and in one case particularly, along with a large abscess in the right lobe, there was an extensive collection of matter situated between the pleura costalis and the ribs on the left side. This child was of a delicate strumous habit, and had been much debilitated by long previous illness. It is clear, I think, that the delicate mucous membrane of the glottis and cartilages of the larynx is, in the first instance, affected by the inflammation, and that it becomes afterwards the fixed seat of the disease. We may easily conceive that these parts would be quickly thrown into spasmodic action, and the membrane being highly vascular, in a short time the mucous fluid, which it separates from the blood for the purpose of moistening the air passages and organs of the voice, would be acted upon by the inflammation, and be so thickened and inspissated, as to become a frequent source of uneasiness and difficult expectoration to the patient.

The degree of febrile excitement is as yet moderate; the respiration is not much oppressed; the pulse, however, is quick, and we have torpid bowels and scanty and high-colored urine, followed by hoarseness, cough, and redness of the eyes; and this may be considered, in general, the common order in which the symptoms announce themselves. As long as the disorder continues in the sub-acute stage, or, in other words, as long as the inflammation does not extend itself beyond the glottis and larynx, the case is favorable.

But the whole extent of the tracheal membrane is extremely liable to a continuation of the inflammation, which was at first seated in the glottis and larynx only; and in an exact ratio as it descends will be the violence of the spasm, the rapid successiono f the strokes of the cough, the loudness and sharp tone of the hoop, and the difficulty and distress in recovering the inspiration of air. There are also an accompanying dryness and stiffness of the mem perspiration broke out over the whole surface, and the boy slept comfortably for two hours.

On the 7th, two leeches were applied to the integuments over the larynx, and a powder, consisting of two grains of calomel and ten of powdered jalap, given; four loose motions were obtained from the medicine, and the child appeared in every respect improved, though pale and very feeble; pulse 100, soft, and free from recoil; cough much reduced.

8. Some lingering difficulty of breathing yet remaining, three leeches were again applied to the throat, and a powder given every four hours, containing two grains of James's powder. Cough still less.

9. The aperient powder repeated, two leeches again applied to the larynx; breathing good, and the cough easy, and the intervals between the fits much lengthened.

10. Pulse 100; convalescent.

In a week the child was able to go out into the air, and has continued quite well ever since, perfectly free from cough, and his appetite excellent.

The only remarks I have to add to the foregoing observations are, that I am averse to the use of the warm bath in urgent cases of pertussis in very young children. In no one instance has the immersion failed to induce great excitement, to accelerate the pulse, and to increase the uneasiness and difficulty of breathing. It is necessary, also, in ordering the application of leeches to the larynx, to have them fixed over the cartilages, and not on the soft parts on either side. I have in several cases experienced the greatest difficulty in arresting the flow of blood from the thyroid veins, after the use of leeches in these situations, where the cough has been violent; the nitrate of silver frequently fails, and one is obliged to sit by the patient, making pressure with the finger for several hours before the hæmorrhage will yield. I know instances where, from a very trifling neglect, the child has bled to death.

Portland Place, Manchester, July 12, 1831.—LANCET.

Account of a remarkable change in the appearance of a Tape Worm. By E. BARLOW, M. D., *one of the physicians of the Bath Hospital, &c.*

THE following communication may be interesting to those whose attention has been directed to the subject of intestinal worms. The natural history of the tænia seems to have been hitherto but imperfectly understood. All the accounts and descriptions apply to the worm as it appears when expelled from the body, yet there is reason to believe that the form and condition in the living state, are essentially different from what has been represented, and that this state has hitherto eluded the observation both of naturalists and physicians.

About a year ago, the following circumstance occurred to me: when about to leave the Bath United Hospital one day, one of the nurses hastened to show me a worm just voided at stool by a patient under discipline for acute rheumatism. It was such as I had never seen, being about five inches long, dark colored, flatted, yet with a convexity of surface, marked throughout with minute rings, gently swelling from the head to the body, and then gradually diminishing to the tail. Pressed for time, I directed it to be laid aside until the next day, and, for security, I saw it deposited in one of the bleeding porringers, covering it with water to prevent injury from desiccation, and consigning it to the special care of the apothecary's assistant. On examining the porringer next morning, I found, to my astonishment, not the worm of the preceding day, such as I have described, but a large mass of unfolded tape worm, white, flat, jointed, and in all respects such as patients so often exhibit to their medical attendants after the successful operation of a vermifuge. My first impression was an unpleasant feeling of my own ignorance. I could not imagine but that I must have overlooked what naturalists had recorded, for it never occurred to me that a fact such as I witnessed could be unknown or unnoticed. My first resolve, therefore, was to supply my own deficiency, in full confidence that I should readily find the information I wished. My research, however, was vain, for I could no where find descriptions or delineations of tænia, but such as applied solely to the unfolded worm. Thus disappointed, my next procedure was to make a drawing of the worm from memory, and to send this, together with a written account of the circumstance, to an intelligent friend well versed in natural history. But in this, too, I failed, for he could give me no additional information.

I would have afterwards called attention to the subject, by reporting the facts to some medical journal, but my original statement had been mislaid by the friend to whom I had submitted it, and I had not leisure at the time for drawing it up afresh. It continued to occupy my thoughts, however, and I only awaited opportunity to make further inquiries. Perceiving, subsequently, in Dr. Hodgkin's catalogue of the museum at St. Thomas's Hospital, that he had paid attention to the subject of worms, it occurred to me to communicate with him; and I accordingly sent him a full and accurate account of what I had witnessed, accompanied with a drawing, and with such remarks as the occasion suggested. Of this communication I took no copy, which I now regret, as it would have saved me trouble in the present instance, and was, if I recollect, rather more full than the brief sketch which I now present. It would gratify me to introduce here the Doctor's polite and interesting reply, but as it was a private communication, I do not feel myself at liberty to make such use of it without his express consent. One sentence only shall I extract, as tending to verify my statement, by showing that the same fact had been observed by another living witness. "On mentioning the circumstance to my friend, Dr. Addison, he told me that he once took from a dead subject, a worm in the state described by thee, and that having left it, a similar transformation took place." The confirmation of the fact, supplied by Dr. Addison's evidence, is valuable, and, perhaps, two such instances, separately observed, and positively attested, might suffice to establish its truth. If the fact be admitted as proved, I see not how we can conclude otherwise, than that the form which I have described exhibits the living state of the worm, and that elongation takes place only when vitality is destroyed. That the contracted and elongated states are both natural to the living worm, I cannot conceive, and my persuasion is, that once elongated, the worm could never again contract, so as to recover the form which I witnessed. Bremser, as I understand, has mentioned contracted and elongated states, without noticing further distinction, from which it is clear to me, that he referred only to different degrees of elongation in the dead worm, for that which, according to my view, is the living worm, has no resemblance whatever to the dead one, and could never be confounded with it, neither could any naturalist represent it as being the elongated worm in a contracted state, unless he were, at the same time, prepared to describe the extraordinary change recorded in this paper, which Bremser has not done. The subject may appear insignificant, yet truth is always worthy of being ascertained. If the facts be as I believe, then are there many errors in the prevailing notions respecting tænia, that require to be corrected. If what I represent be true, and the conclusion, as to the living and dead states of the worm, correct, it is most extraordinary by what power of inanimate matter such complete unfolding as I witnessed, could be effected. Simple elasticity is the only such power I know. That vital power should counteract elasticity during life, is easily conceived, but the exercise of this to such an extent after death, appears to me quite unexampled.—LANCET.

On the Nature and Treatment of Burns and Scalds,[*] *by* JOHN THOMAS, Esq., *Surg., Hackney.*[†]

"THE best method of treating burns and scalds" is a subject of much interest, and of great importance to the profession; and it has very properly occupied much of the attention of many able and ingenious surgeons. These have proposed and adopted various methods of cure, and have contrived many plans, each excellent, and infallibly efficacious, in the opinion of its author, for mitigating the sufferings of the patient, and expediting the healing process. As numerous, however, have been the applications recommended in the treatment of burns and scalds as they have been different and contradictory. Some have been considered as very excellent "for drawing out the fire," and others "for burning the burn;" some for producing a speedy cicatrisation, and others for healing it in a wonderful manner. Mr. B. Bell has asserted, that plunging the injured part suddenly into *boiling water* would procure ease, and immersing it into *cold fluids* would also produce the same effect. This treatment of intense heat and stimulation is not to be continued after "the parts have recovered their equilibrium of susceptibility;" but the frigid immersion is prescribed without any limit in its application, and the patient may even be thrown into rigors, and a condition of the most fearful collapse, according to the practice of some, so that "the fire" be but extracted from the injured parts. Some employ stimulants, others sedatives; local stimulation by one class of practitioners, is used for the purpose of co-operating with the stimuli they exhibit internally; and topical sedative applications and constitutional excitants form a practice adopted by another, for purposes certainly only intelligible to those who exhibit them.

Amid such a chaos of contradiction, such an *indigesta moles* of plans, methods, and recommendations, the question may with propriety be asked, "What shall we say of the medical art, if remedies so diverse in themselves have been proved efficacious? May it not be replied, that nature has been more powerful than our mystery; and in proportion to the activity with which remedies have acted upon the constitution, has been the power of the vital energy, which has been roused, as it were, to resist the inordinate action.

The unscientific practice so frequently adopted in the treatment of burns and scalds, seems to arise from the erroneous opinion that they are specific in their nature. This idea has led surgeons to an inference equally incorrect, that as the malady is specific, its cure must be effected by extraordinary means—by remedies, in fact, the virtues of which are adapted specifically to the peculiar condition of the injured parts. Cases, it is true, have terminated favorably under all kinds of treatment; but the cure which results, is not because the local applications contain in themselves any peculiar efficacy, but because nature, exercising a power in the system that is superior to the unfavorable operation of our measures, which are too often ill-judged, pursues her own course, and completes the cure in her own way. Natural action may be retarded or interrupted; and the observer must have often noticed that as soon as our interference is withdrawn, and we leave nature to her own resources, so soon, frequently, will she begin to rally, and to manifest, by symptoms which cannot be mistaken, disapprobation of our officiousness, and determination to suspend her salutiferous efforts.

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[*] Being the substance of an Essay read and defended before the London Medical Society, and for which the author received a unanimous vote of thanks.

[†] Late demonstrator of anatomy, and successful candidate for a prize awarded after a public examination of two hours in anatomy, at St. Thomas's Hospital.

I have been induced to make these remarks from the conviction, that we are too apt to endeavor to take nature by storm in our treatment of burns and scalds, and by means which have acquired notoriety, either *from their antiquity*, or because individuals of acknowledged reputation have said they have proved them. But there is no royal road here. To drive nature is impossible; though humiliating to the "art and mystery of physic," it is nevertheless true, that the natural efforts can only be assisted, and we, its professors, must be content to follow and not precede. Impressed, therefore, fully with this sentiment, and that contrary measures are injurious as well as injudicious, I shall be directed in this essay, as much as possible, by what experience has taught me is most consonant with the laws and habitudes of the animal economy.

Nature of these Injuries.

Though the treatment of burns and scalds is the subject proposed for discussion, I think a few remarks on their nature will not be altogether irrelevant.

"Burns and scalds are nothing more than inflammation and its ordinary consequences, induced by the operation of high temperature upon the textures of the body; and when the heat is intense the part is instantaneously destroyed, there being no time or opportunity for previous inflammation."

Inflammation may be produced by low temperature as well as high. Cold acts upon a part by diminishing its vital power, thus making it less capable of sustaining the return of the circulation to its natural condition. In this case the vascular action is not absolutely increased; the relative disturbance is not between the circulation in the part to which the cold was applied, and that in the surrounding textures; but between the local circulation and the vitality of the part. The former is natural, the latter is diminished. Seeing then that the part cannot bear the wonted arterial action, the condition so well known as inflammation becomes developed by the manifestation of its ordinary phenomena. This, however, is not the condition of a part which becomes inflamed from an opposite cause. When heat, or any other stimulant, is applied to a part, its operation does not increase vital power, but arterial action; the vitality remains the same, but the vascular action is increased and becomes too energetic to be borne with impunity. Hence, again, we have inflammation produced, indeed, by different causes, but evinced by the same symptoms. And here let us not forget, that though the exciting cause is different, the inflammation produced is not at all peculiar. Inflammations arising from cold or heat, a thorn, or other irritants, are attended all by the same signs, followed by the same consequences, and offer the same indications of treatment.

If then heat does not excite a specific inflammation, will it be reasonable to assert that degrees of heat should produce one? If the heat be intense it will instantly destroy vitality; if cold be so too, it will also effect the same thing, though in a different way. Degrees of heat and degrees of cold will bring on like intermediate conditions between the two extremes. There is nothing specific in all this.—No; it is the operation of common causes on the circulation and vitality of parts, inducing common results. It matters not, therefore, I contend, whether the vitality of a part be destroyed, or the local circulation disturbed, by the contact of boiling oil, melted lead, or hot water; by the explosion of gunpowder, or of carburetted hydrogen; or by the conflagration of a house, the burning of linen, or the flaming of faggots. The treatment has in it nothing specific, and ought to be as simple and unirritating as possible.

Appearances of Burns.

The appearances observed in burns are different, according to the intensity with which the causes producing them have operated, and according to the kind of agent of which they are the effect. Scalds do not exactly resemble burns which are occasioned by the immediate application of heated metallic, or other solid bodies. As fluids and solids have not equal capacity for caloric, scalds are generally less violent in the injury they occasion than burns; but scalds are frequently dangerous on account of their extent, the fluids by which they are produced diffusing themselves over a greater extent of surface, and generally falling in larger quantities on the patient. It is worth observation, that burns are dangerous in proportion to the magnitude, rather than the degree of injury. A burn, if not extensive, may not be in the least dangerous, although the effects of the fire have been so violent as to destroy the vitality of the parts instantaneously; while a scald, which only produces vesication, may prove mortal, if very large. Hence it will be seen that the danger depends on the impression made on the constitution. This impression, however, is modified, and, therefore, in our prognosis, we cannot predict what will be the issue of the case, from having seen in other patients equally severe burns do well. An injury, which in one individual would be his death, in another might cause no general disturbance of consequence. It is, therefore, idiosyncrasy which in a great measure increases or diminishes the danger. In one patient I have witnessed high and furious excitement; in others, some slight constitutional disturbance, although the local injury in the one has been apparently no more violent or extensive than in the others. In some cases so great is the shock on the nervous system, that little pain is complained of "and the poor creatures," says Mr. Abernethy, "who have been brought into the hospital with extensive burns, toss themselves about in the bed without complaining of much pain." Another circumstance which determines the danger of these injuries, is the situation in which they occur. Those parts which subserve to the most important functions in the animal economy, when injured by burning or scalding, are generally attended by worse effects than if the injuries were received in parts less highly organized.

There is a great resemblance between burns which only destroy the cuticle, and the effects of a blister, mustard cataplasms, and other rubefacients. The influence of these applications on the part is to increase the local vascular action, which terminates in the effusion of serum under the cuticle, thus elevating and detaching it from the subjacent cutis; so that the surface of the part affected presents eminences and depressions according to the intensity of the cause, and the *modus in quo* it has operated. If, however, the subcuticular textures have been destroyed, no vesications will be seen, and instead thereof a black unsightly slough will be observed, which, when thrown off, will leave an ulcer more or less deep, according as the injury may have been more or less severe. But the part may be instantaneously deprived of life; no time or opportunity occurring for previous inflammation. In this case ulceration is immediately set up, and the absorbents proceed, as soon as circumstances will admit, to separate the dead parts, and to rid the living structures of the incumbrance. As soon as the eschars are removed, we perceive an ulcer, which assumes a healthy, indolent, or irritable character, according as the constitution may be in one or other of these conditions.

If the *constitution be healthy*, then we have the wound covered with "pus of a white color and thick consistence, and readily separating from the surface of the sore," and the granulations are small, florid, and acuminated. If *the powers be languid*, then the surface of the granulations appears smooth and glossy, and the pus, instead of being creamy, is thin and watery; and if *irritable*, the granulations are indistinct, and the surface of the part assumes a spongy aspect, and will bleed on the least touch. Instead of bland, unirritating, healthy, pus, there is a thin ichorous discharge; and if the injury is in the hands or feet, the digital arteries will frequently give way. Here we may observe a very great analogy between burns and ulcers of the descriptions named. This fact has led some to suppose, that because burns and common ulcers are similar in appearance, they ought, therefore, to be treated in the same way; and hence they have prescribed ointments of various healing properties; namely, bland curatives for the irritable, and stimulating for the indolent sore. But there is in reality a great difference between burns and common ulcers, and this consists *in the exciting cause, and the state of the constitution.* There is great dissimilarity between an ulcer which is produced from a constitutional cause, and a burn which is inflicted on a constitution susceptible of a healthy, indolent, or irritable action; therefore, though the appearances are often the same in burns and ulcers, the indications of local treatment are not similar.

Treatment.

The *modus curandi* burns and scalds, till very recently, has consisted in the indiscriminate application of the oleum terebinthinæ, cold linseed oil, and lime water, and the unguentum resinæ flavæ, to the parts. Formerly, the application of strong brandy and alcohol was particularly praised; the liq. plumb. subacet. was also much approved of, as tending to prevent the subcuticular effusion of serum.

A friend related a case to me, in which, after freely using the oleum terebinthinæ, he dressed the parts with the ung. hydrarg. nitrico oxydum, and thus induced a profuse salivation. Vinegar is recommended by Mr. Cleghorn to be applied until the pain abates, when a poultice is to be applied for the next six or eight hours. The surface is then to be covered with finely-powdered chalk, and upon this is to be laid a poultice; the sore is to be dressed night and morning until cured. He thought these remedies possessed powerful antiseptic properties. He allowed a somewhat generous diet—a moderate quantity of wine and spirits, and never used purgatives. Sir James Earl recommended very cold water—a dangerous plan, and well calculated by its sedative effects to destroy the patient.

Baron Larrey advises saffron ointment spread on lint, to be applied to deep burns; this, he thinks, has the quality of diminishing the pain and preventing irritation, by preserving the nervous papillæ from coming into contact with the atmospheric air. The principle upon which the Baron acts is excellent, though in his account he overrates the power of his remedies. The ung. storacis, he says, supports the systaltic power of the subjacent vessels, promotes the detachment of the eschars, and checks the extension of the sloughing. His general treatment is nutritious, emollient, and antispasmodic, which he designates as soothing and gently tonic.

Dr. Kentish, in his treatment of burns and scalds, proposed to himself this law, which in practice he made his rule of action: "That any part of the system having its action increased to a very high degree, *must continue to be excited*, though in a less degree, either by the stimulus which caused the increased action, or some other having the nearest similarity to it, until by degrees the extraordinary action subsides into the healthy action of the part." To set this singular hypothesis in its true light, we will suppose that the brain, which is undeniably a "part of the system," has had its action increased so as to have become inflamed, in order, according to Dr. Kentish, to make it "subside into the healthy action of the part," we must, instead of pursuing the ordinary measures in such a case, continue to excite it, though in a less degree, by means similar to those which produced the inflammation, or "any other having the nearest similarity to them." Acting, therefore, upon the principle involved in this curious and undefinable piece of ingenuity, Dr. Kentish recommends the burn or scald to be held to the fire. This "burning the burn," however, is not always convenient; he advises, therefore, that where this was impracticable from the situation of the injured part, stimulating remedies should be applied, such as essential oils dissolved in the strongest rectified spirits, and used as hot as could be well borne; heated oleum terebinthinæ (cayenne pepper?), &c. These are to be gradually diminished in intensity until the parts act by common natural stimuli. Ether, opium, ardent spirits, and wine, he administered as internal remedies, in order that the stimulus might be speedily excited, and the unity of action quickly restored, which in his opinion constitutes the cure. The best principle he has laid down is similar to Baron Larrey's, namely, "that the injured surface should be exposed as little as possible."

Of the Doctor's lucubrations, it may be said they are truly fanciful and visionary, well calculated to amuse the imagination and to entertain the speculative, but never certainly to inform the understanding, or to improve the judgment.

At St. Thomas's Hospital, and at Guy's until lately, it was the practice to apply cold remedies, and at the same time to administer stimulants, thus blowing as it were "hot and cold with the same breath." The principle is briefly this:—internal stimuli to excite vascular action and vital energy; cold applied to large surfaces which diminishes both.

The following case illucidates brilliantly this beautiful system, the effect of which wes to kindle a tumultuous war in the constitution to which the patient fell a victim:

Case 1.—" A child, about ten years of age, was brought into Guy's Hospital on January 3, 1827, having been severely burnt in consequence of her clothes catching fire. The principal parts injured were the face, neck, and arms. The extent of the mischief was unequal; in some places the cutis was destroyed, in others the cuticle only had suffered, but there was, throughout the greater part, abrasion of the cuticle. The accident occurred about half an hour before it was brought into the hospital. *The radial pulse could scarcely be felt*, and indeed the pulsation of the heart could scarcely be distinguished; the surface of the body and the extremities were cold. The patient being put to bed, small quantities of brandy and ammonia were very properly given, and equal parts of linseed oil and lime water were applied *cold* over the extensively burnt surfaces.

" On the following morning, re-action had taken place in a very imperfect degree only. The same system was persevered in, and *on each time of applying cold the child shivered*, and it was apparent that the heat of the body, as it was slowly developed, was as quickly suppressed. In the evening Mr. Callaway saw the patient, and ordered turpentine liniment, gently warmed, to be applied to the parts; the brandy and julep of ammonia to be continued.

" On the third day complete re-action was established, and febrile excitement was substituted in place of the former congestive state; brandy and ammonia were *still continued*, and the turpentine locally.

" On the fourth day a state of high constitutional excitement; pulse very quick; the tongue furred and dry; the respiration hurried and thickened, with constant thirst and great restlessness.

" On the fifth day constitutional symptoms equally severe, but the breathing had now become decidedly affected. The child in fact had *every symptom of inflammation in the trachea;* there was the peculiar croupy sound at each inspiration, with great dyspnœa, the pulse at the same time rapid and bounding; the eyes were suffused, and the temporal arteries were seen strongly beating. The tongue was furred, dry, and brown. The child was constantly desiring drink, but on swallowing the fluid coughing was excited, when the brazen, harsh, noise of croup was heard. The brandy and ammonia were still exhibited.

" On the sixth day the symptoms were unabated. Brandy and ammonia still exhibited. On the seventh the child died.

"It was found, on opening the body after death, that the lining membrane of the trachea was acutely inflamed. A layer of coagulable lymph was spread over the inner surface of the trachea to the extent of several inches. The bronchial passages were loaded with a frothy fluid, and the lungs were in a state of congestion."*

Thus having noticed briefly the principal methods adopted in the treatment of burns and scalds, I shall proceed at once to the proposal of a plan—better, I conceive, inasmuch as it approximates nearer to simplicity, and is constructed more on natural principles than any other as yet submitted to public criticism. The living human body, like every thing else, is subject to certain laws, and these are called the laws of life. The unity which presides over these laws, and directs their operation, for want of a better term, we call Nature. It is this power in the system which endeavors to correct the slightest deviation from healthy action, and struggles to throw off any unfriendly thing which obtrudes itself. Thus, if a particle of dust get into the eye, the attention of nature is immediately drawn to the circumstance, and she instantly diffuses over the organ a flood of tears—first to defend the part, and then to wash away the irritating body. "Sed, hinc illæ lachrymæ." If any noxious matters be taken into the stomach, or others which are innocuous though in excess, the natural action is inverted, and thus she expels the intruders from the system. If again there be a solution of continuity in the solids nature immediately endeavors to repair and heal the breach.

The power which effects these things is called the "vis medicatrix naturæ," the constant office of which is to set up the curative process when the body is diseased. This healing power is the physician of nature's self, and we who profess the mysteries of the "art of physic" must, if we would be successful, match the operations of this important power; we must observe it, follow it, assist it, and not attempt to force it.

It being true, therefore, that nature does by her own powers to a certain extent, recover the body from disease, we must acknowledge the importance of that precept which enjoins a primary attention to the condition of the constitution, when the body has sustained a severe injury. The most excellent applications to a part will not heal a wound there, if the system be collapsed, and the powers of life weak; but, on the other hand, the powers of the constitution will frequently effect the cure of an injury without local applications at all, if they be healthy, and acting with their due and natural force. But, however, as we have rarely to do with patients, whose vital energies are so good as not to require assistance, it is necessary we should consider the most proper means to be adopted in co-operating with this "vis medicatrix."

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* Previous to the discussion which was instituted upon the merits of this essay, the doctrines of which the author had publicly to defend before the members of the Society, Mr. Callaway took the opportunity of saying, "that since the author had read the paper on the preceding evening, he had referred to the hospital book, according to the date quoted, but had not been able to find it, and that therefore it was impossible for him to offer any remarks upon this case, as he had then no recollection of it whatever." The author has only to say in reply, that he copied it literatim and verbatim from the hospital reports of THE LANCET, which are acknowledged by all who witnessed the cases and read the reports of them, to be *in essentials* exceedingly accurate. Mr. Callaway, of course, is only responsible for the very proper change of treatment he instituted on the evening of the 4th of January. The injudicious continuance of the exciting plan, after the inflammation of the trachea had been set up, is alone reprehensible; for which, not Mr. Callaway, but he, under whose care the patient continued, was accountable---a fact with which the report does not furnish us.

When a person has been severely burnt or scalded, his system frequently experiences a shock, which depresses the energy of his nervous system so as even to endanger his existence. The pulse becomes so small as hardly to be perceptible, and the power of sensation so obtuned as that the patient is semicomatose, and evinces little or no pain. There is an indifference and stupidity about him, which those around cannot mistake. In such a case as this, it requires little to put the patient, *hors de combat*, beyond the reach of further suffering. Sir James Earl's application of pounded ice and cold water is very efficient and excellent for this purpose—a sure means of dissolving a spiritual and tabernacular connexion. In a case of this sort stimulant remedies must be administered, such as brandy and ammonia, or brandy and opium, and local cold religiously abstained from. The indication is to rouse the constitution to that action which is necessary to contend with the effects of the local injury. To do this, and to know when to forbear, must depend upon the observation and judgment of the surgeon. If febrile excitement come on, and symptoms of inflammation in other organs become manifest, then we must desist from these measures, and institute a plan quite contrary in its effects; such as the abstraction of blood, the exhibition of gentle laxatives, and a strict antiphlogistic regimen. And here I cannot proceed without adverting to the constitutional treatment adopted in the case of the child admitted into Guy's Hospital already recited.

The great importance of attending primarily to the state of the constitution is strikingly manifested in this unfortunate case. Here the child's powers were first depressed; the radial pulse was scarcely perceptible, and, as might have been expected, there was little evidence of pain. Mr. Assistant-Surgeon Callaway *very properly* endeavored to rouse the vital powers by the exhibition of brandy and ammonia, and had the surgeon of the establishment who succeeded him in the treatment, abstained from local treatment altogether (which would have been infinitely better than the plan he adopted,) and have desisted from the exhibition of stimuli on the coming on of febrile excitement, the patient might have done well, at any rate would have had a fairer chance of doing so. But, instead of this, cold remedies were applied locally, which produced rigors, and kept down the necessary re-action; and brandy and ammonia were administered internally—cui bono? Equidem dicere non possum. On the third day, however notwithstanding the sedative effect of the local treatment, re-action was completely established; febrile excitement succeeded to congestion, and on the fifth day inflammation of the trachea was set up. Dr. Kentish's plan was now acted upon, and the surgeon not satisfied with the ordinary treatment of cynanche trachealis on strictly antiphlogistic principles, struck out for himself a new path as has been related, and in the act of reducing "the extraordinary action of this part of the system to its healthy action;"—quid dicam?—Mortuus est ægrotus.

If the patient, prior to the accident, have been an individual of robust health, and accustomed to high living, when re-action is established he must not be suddenly reduced to a strict antiphlogistic regimen. He may be allowed food of a light, nutritious, and easily digestible nature; and if used to wine, he may take it, in less however than his usual quantity, and diluted. Spirits must be abstained from, and all other matters which possess stimulant rather than nutrient properties. But as soon as febrile excitement begins to appear, so soon must the plan of treatment be changed. Laxative medicines must be given; frequent purging is not advisable, because the patient experiences much inconvenience from the change of position necessarily attending such a state. Diaphoretics are useful; and where thirst is troublesome, the effervescing draughts will be found very convenient, as well as agreeable to the patient; difficulty, however, will be experienced in their exhibition if the lips are burned, though, in this case, I have given them with advantage.

The diet must be simple, and consist principally of fluids.—Should febrile excitement run high, and symptoms of inflammation of the brain, trachea, or other important organs, manifest themselves, reliance must chiefly be placed on the free abstraction of blood. If the brain be inflamed, the means ordinarily recommended in the treatment of phrenitis must be employed. Recourse, however, in this affection, should not be had to blisters, sufficient skin being already injured without irritating it further. If the trachea be inflamed, it also must be treated on common principles, and so of any other inflammations that might supervene. Should the patient go on without any accidents of this kind after re-action is established, and the suppuration be free and copious, the system may be supported by a generous, though not a stimulating or full diet. The constitutional symptoms must be carefully marked from time to time, and the practitioner must direct his measures according as they become developed in a favorable or unfavorable manner, for it is upon his judgment that the recovery often depends.

The idiosyncracy of some persons is so peculiar, that even the application of a blister will cause high excitement. I knew an individual so irritated by one that it produced temporary insanity. If then a blister produced this, how much more likely is an extensive cutaneous injury, such as a burn or scald, to excite cerebral disturbance in a higher degree and of longer continuance. This condition of brain comes very near to that in delirium tremens, a condition in which there is much risk, nay, great danger, in the free abstraction of blood from the system. Bleeding from the head by leeches, is useful, and indeed in the early stage indispensable. The indication is, to calm the irritability, to support the nervous system, and to procure sleep. This may generally be effected by brandy and opium; and as the secretions are generally vitiated, where the nervous system is much disordered, the exhibition of aperient medicines will be necessary. If a sound sleep can be procured, the patient will generally awake considerably refreshed and quite calm. This is an opportunity which must not be lost, as it might prove fatal; food, therefore, must be given, and if the patient has been accustomed to wine or ardent spirit, the stimulus in diminished quantity must be contined. The necessity of attending to the constitution (which I call the *primary* treatment, the *local* being *secondary* in importance) is very well illustrated by the following case.

Case 2d. Eliza James, aged 18, a girl of strong, robust habit, was admitted into the Middlesex Hospital, January 31, 1825, in consequence of a burn. The greater part of the skin was red and vesicated, and the temperature much increased, accompanied by great pain of the injured parts. Linen, dipped in a lotion of the acetated solution of lead and spirits of wine, was ordered to be applied.

Feb. 1. Pulse more quickened than previously, and the bowels costive. Pulv. jalap. comp. gr. xv. were prescribed.

2. The powder had not operated; the pulse was 100, and there was considerable febrile action. A mixture of salts and acetate of ammonia, with tartarised antimony, every four hours.. Some parts began to slough, to which poultices were applied, and the lotion was continued to others.

During the night of the 3d, the patient was restless, and occasionally delirious, and constantly complained of severe headach. In the morning, however, her replies were rational; pulse 130, and hard; bowels opened by the salts; tongue furred and dry; constant nausea and frequent vomiting much distressed her. Effervescing draughts, with m. x. of laudanum in each, every six hours.

4. Pain in the head much increased; leeches were applied to the temples. This morning the pulse is 120, and full. Pain in the head diminished. No alteration made.

5. Pulse 110, and wiry; skin hot and red, with great restlessness and delirium; respiration hurried; tongue furred, brown, and dry, with a great accumulation of sordes on the the teeth and gums. The head was shaved and cold lotion applied to it; the body frequently sponged with tepid water, and twelve leeches to the temples; antimony and calomel every four hours, and the effervescing draught, with the omission of the laudanum.

6. She was bled last night to twelve ounces, in consequence of increased fulness of pulse and delirium; two grains of opium were afterwards given. She has passed a more quiet night; pain in the head diminished; pulse 100; bowels costive; tongue furred and dry; skin hot; answers questions rationally. A purgative enema was ordered; powder and mixture continued, and at bed-time an opiated antimonial.

7. No particular alteration. The opiate procured rest, and two grains are to be taken this evening.

8. The patient has decidedly improved; m. x. of laudanum were again added to the draught, and the powders discontinued; at bed time calomel and antimony.

9. Still improving; the laudanum reduced to m. v; the sloughs have separated. Up to this time the parts were dressed with poultices, and linen dipped in cold lotions. For the future the wounds are to be dressed on the common principle laid down for the treatment of ulcers.

11. A more liberal diet ordered, with broth. From this period she has gradually improved, and the parts are nearly healed.

It cannot be said that in this case the burn was cured by poultices and cold lotions. There is no anticombustive virtue in cataplasms, or healing property in cold lotions; the former is an excellent means for applying moist warmth, and the latter for reducing the temperature; but other measures than these must be sought for as the curatives of the injury. The healing of the wounds, I suspect, must be ascribed to the *vis medicatrix*, assisted by the prophylactic effects of the *primary* treatment.—Hence it will be seen that much depends upon the judgment and observation of the surgeon, and that no rule, or set of rules, can supply the deficiency. So simple, and yet so sufficient, is the practice in these cases, that if the practitioner have but a common understanding, and is educated in right principles, he cannot fail to manage the constitutional or primary treatment of burns and scalds in a judicious manner. For this reason, therefore, I shall conclude my remarks on this part of my subject, and proceed to the *secondary*, or local, means to be adopted.

Perhaps there is no part of practice upon which surgeons differ so much, as that of the local treatment of burns and scalds. By nearly all it has been made very complex—by few or none, simple. Opinion on opinion has been advanced, rule upon rule has been laid down, and principle on principle has been demonstrated; all have been thought infallible, but each and every of them has been controverted and proved fallacious. But, as according to the proverb, "where much dirt is thrown some will stick," so amidst the rubbish of theorists, here and there something good may be found; an opinion hypothetically and casually stated is oftentimes of more value than the whole body of their lucubrations put together.

The suggestion to which I allude has been already mentioned, when speaking of the plans of Baron Larrey and Dr. Kentish. The Baron advises, that "the nervous papillæ should be preserved from coming into contact with the atmospheric air, which diminishes the pain and prevents irritation;" and the doctor recommends, for the same reason, that "the injured surface should be left uncovered as little as possible." These two hints, therefore, I consider as of great importance in the treatment of burns and scalds, because two very great points are gained—the diminution namely of pain, and the prevention of irritation.

In the secondary treatment of burns and scalds, four indications are principally to be attended to—

1. To exclude, as completely as possible, the atmospheric air from the wounded surfaces.
2. To keep the pus in apposition with the burn.
3. To prevent the evaporation of the thinner parts.
4. To prevent, as much as possible, accretions and deformities.

The chief consideration, therefore, in the local treatment, is to exclude the air. It is of little consequence whether the part be rubescent, vesicated, or excoriated, the principle remains the same, and is still applicable. Some surgeons inquire, "in those milder burns, where the insensible cuticle is for the most part unbroken, how are we to imagine that the external air could prove so hurtful, even were it possessed of those noxious irritating qualities which the imaginations of surgical writers, rather than nature, have conferred upon it?" In answer to this, I reply by another question. Admitting that the cuticle is unbroken, admitting also that the air has no noxious properties, can the fact be denied, that when the air is excluded from inflamed surfaces, pain is diminished, and irritation prevented? I have had patients in whom irritation has come on to such a degree as to be almost insupportable, after the application of a blister, they have begged of me to do something, or they should tear themselves to pieces. Acting upon the view of the case I have already taken, I have completely excluded the air, and almost immediate relief has followed. Again, in erysipelatous inflammation, cutaneous irritation invariably subsides, by adopting the same plan. Hypotheses may be disputed, but facts cannot be controverted. I hold it, therefore, to be a primary consideration in the secondary treatment of burns and scalds, *to exclude the atmospheric air as completely as possible.* In doing this, the second and third indications may be fulfilled at the same time. It remains for us, therefore, to consider what substances are best adapted for this purpose. To accomplish this desirable object, articles of various descriptions have been suggested; saffron ointment, viscid substances, lapis calaminaris, c. opio, finely carded cotton, chalk finely levigated, flour, &c. have each been said to be preferable to the other as aerial exclusives. The surgeon's choice, however ought to be determined, not so much by their relative medicinal properties, as by the following considerations.

In selecting our remedy, two things are principally to be attended to, first, which of the substances enumerated can be obtained with the greatest facility. And, secondly, which is the most convenient in its application? Cotton has been strongly recommended by an American physician; it is certainly a very good application, and easily applied, and perhaps has this advantage, that it keeps the bland pus in apposition with the burn. I know of no objection to its use, and were it as readily obtained as any other agent, I should invariably prefer it. But this is not the case; it becomes us, therefore, to fix our attention upon something else, as an application easily attainable at all times. There is, perhaps, no family in which accidents of this kind occur, except they be abjectly poor, that cannot furnish us with a good remedy for burns and scalds. The article to which I allude, is the common one of diet—*flour*, a very mild, soft, and unirritating substance. Flour, as a dressing, is quite competent to effect the two first indications, namely, to exclude the air, and to keep the pus in apposition with the sores. Its application is very easy, by means of a flour-dredger. Where, however, the anterior and posterior surfaces of the body are implicated, it cannot be conveniently applied by the dredger alone; a quantity, therefore, may be strewed upon some linen, and the part applied to it, which will answer the purpose almost as well, the object being to coat the surface with the flour.

Flour, or finely carded cotton, therefore, are the substances I would recommend as a dressing for the wounds; these, however, do not fulfil the third indication satisfactorily; it is necessary, therefore, that some additional dressing should be used. The best and simplest for this purpose is a plaster made of spermaceti cerate, spread on lint. This plaster, after the parts are well dredged with flour, must be superimposed over the whole, which will, as effectually as possible, exclude the air, keep the pus in apposition with the bur or scald, and prevent its thinner part from evaporating.

The fourth thing to be attended to, is to prevent accretions and deformity. Notwithstanding every attention, these will sometimes take place; and it often occurs, that parts will not heal when under necessary constraint. It is our duty, however, to use every means to prevent them. If the hands and feet are the injured parts, the fingers and toes must be kept separate; and if the burn be in the vicinity of the joints, they must be extended, and their flexibility at the same time preserved, by flexion and extension at proper periods. But where we find that the evil is unavoidable, the future position of the limb is a very important consideration. A crooked will be of more service than a straight arm; and a straight than a crooked leg. "The anchylosis which takes place, arises partly from preternatural adhesions, partly from long inaction of the muscles and tendons, *and partly from the absorption of the granulations after cicatrisation*, and the subsequent contraction of the skin. The simple division of such shortened portions of the integuments, is rarely succeeded by any permanent removal of the wryness, deformity, or immobility of parts; and after the wound has healed, things generally fall into the old state again. Here the practice suggested by Mr. Earle in the *Medico-Chirurgical Transactions*, to cut away the cicatrix, bring the sides of the new wound together in a longitudinal line, and maintain the observance of a better position for a certain time, by means of splints and other mechanical aids, has sometimes materially and permanently lessened the deformity.

If the injured part be a limb, a very essential point to be observed is, the position in which it is placed. Position of the body, or of a part, is of great importance with respect both to the production and treatment of disease. This principle will be better illustrated, if we refer to the principles of the school of Bichat; and if we believe that physical qualities are also much concerned in the production of phenomena which take place in the system. If there are cases in which the action of these physical properties ought to be taken into consideration, it is certainly in those diseases termed surgical. In the case of paronchia, if the hand be the most depending part, all the symptoms, even to the inflammatory phenomena, pain, redness, &c. will become augmented.—Raise the arm so that the diseased finger shall be the most elevated part, and all the inflammatory symptoms will become diminished. Position, therefore, must not be disregarded in the treatment of burns and scalds, for what is true of the less, is also true of the greater lesion.

Called then to a case of burn or scald, I should consider, first, the effect on the constitution. If the nervous energy were depressed, a dose of brandy and *ammonia* should be administered, and repeated at proper intervals, until re-action were brought about; if, on the other hand, there were constitutional disturbance, brandy *and opium* would be indicated. The local injury would next demand attention. Having cleared the parts as tenderly as possible from extraneous matters, the wounds should be covered, as thickly and completely as necessary for the exclusion of the air, with flour, in the manner already directed. It matters not what the condition of the parts be; the whole must be covered, the object being perfectly to defend the surfaces from external irritants. Then, if the fingers or toes were burned or scalded, I should cut strips of simple cerate plaster, and, with much delicacy of touch and tenderness, entwine them round, and insinuate pieces between the digital bases also; over the plane surfaces corresponding pieces of plaster should be laid. It being a very important thing to prevent articular contractions, our attention should be particularly directed to this point. When the parts are dressed, therefore, the joints should be extended and maintained in that position by means of some mechanical contrivance. The common splints are not well adapted to this end. For our present purpose they should be made of a bread thin piece of board. If the hand, as far up as the styloid process of the ulna, be the injured part, a board about a foot in length and six inches in breadth will be needful. The dimension of other splints must be determined by circumstances, such as the size of the patient, the situation of the injury, &c. The parts must not be laid on the bare board; a cushion of tow, or other soft material, must be interposed, which will form a kind of bed to the sensitive surfaces, and afford the patient comparative comfort. Broad linen fillets must be passed round the whole, and tied, so that the knot comes against the edge of the unyielding splint, otherwise it will be a cause of much irritation and annoyance to the patient, by pressing upon some tender part. A very important thing to prevent is the obliteration of the nostrils, which may be effected by inserting pledgets of lint smeared with cerate. The eyelids must be separated from time to time, by passing a probe between them from one angle to the other.

Thus having completed the dressing, the patient should be laid in his bed, and made as comfortable as circumstances will permit. The extremities must lie on inclined planes, so that the return of the blood to the heart may be facilitated; they must not be placed too high, because the dressings become weighty, and by the dragging sensation distress the patient exceedingly. Cleanliness and quietude must especially be attended to, for nothing is so calculated to assuage nervous, irritable impressions as comfort and repose. Daily and gentle evacuations should be obtained, and the plan already advised, when treating of the primary treatment, be adopted.

With respect to the renewal of the dressings, that "must be regulated by the quantity and quality of the discharge, by the situation of the injury, by the climate and season of the year, by the effects which the renewal of the dressings seems to produce, and by the feelings, and sometimes the wishes of the patient." In dressing the burn or scald, Dr. Kentish's recommendation should be particularly observed; the whole of the plaster should not be removed at once, on the principle, that as small a surface as possible should be exposed at once to the air. If the surgeon neglect this rule, the patient will soon admonish him of his error, by complaining of great pain, and beseeching him to "cover the wounds with flour as speedily as possible, for the air smarts them." A strip or piece of plaster only should be removed at a time; then, after dredging the part again, another slip should be applied, and so on, until the whole is removed.

The following cases are useful, as exemplifying the excellence of this simple, though effective plan of treating burns and scalds. The first is a case of my own, and the second is one which I have extracted from the *Lancet* of October 17, 1829.

Case 3d. J. H. aged 32, enjoying previous good health, came under my care. in consequence of a severe injury occasioned by the combustion of several thousand cubic feet of carburretted hydrogen. His face, hands, and left knee were implicated; the former were deeply burnt, the latter only superficially. The tunica conjunctiva, where reflected over the white of the eye, was vesicated; the transparent cornea, however, was not at all hurt, and the nervous system appears not to have sustained at the time any serious shock. I did not see him during the first twenty-four hours. A medical man in the neighborhood was attracted by the noise of the explosive mixtures, which now and then burst from the immense gasometer. He made inquiry of the patient's friends, much to the amusement of the by-standers, if "his bowels were open;" and as a local remedy, counselled his removal "to St. Bartholomew's on a shutter."

June 18, 1829, I visited him with another surgeon. As it was likely to prove an interesting case, and one in which the old and new system of treating burns might be tried, it was agreed that, as he was a disciple of the ancient method, my friend should adopt the routine practice, and I that already described. He therefore took the right hand and face under his care, and I the left hand under mine.

J. H. has passed a tolerable night, and this morning seems tranquil. No constitutional disturbance. Let the bowels be opened. The right hand to be dressed with unguentum resinæ flavæ, and the left with flour; both to be laid on boards, tow being interposed, and the extremities raised so as to facilitate the return of the blood *ad cordem*. The face to be kept constantly wet with cold lotion.

19. The dressing gives exquisite pain; the left hand suppurates freely, and is doing well. So much does my friend approve my treatment, and so much difficulty has he "in dissecting off" his plaster of yellow basilicon, become firmly adhesive, that he resolves to abandon "l'ancienne methode," and to adopt the mild unirritating one of dredging.

Symptoms of constitutional disturbance begin to manifest themselves. The patient is troubled by heat and thirst; pulse 100; tongue furred, but not dry, and rather restless. He says his hands feel as though so many crabs were attached to them. Let the treatment be antiphlogistic, let his bowels be opened, and effervescing draughts be exhibited every three hours.

20. He has passed a tolerable night. The bowels have been freely opened, and the patient thinks himself, and is certainly, not worse. The purulent secretion from the hands is very copious and rather offensive; the wounds continue to look healthy. Let them be dressed as usual; the draughts to be continued.

21. Slept pretty well during the night. Thirst and heat of skin somewhat increased, and the pulse accelerated. Let the medicines be continued. The face to be dressed as the hands; these are going on well.

22. Bowels costive; let him take pulv. jal. c. cal. gr. x. No material alteration in other respects; let the dressings and draughts be continued.

23. Last night the patient was exceedingly restless, and the subject of much febrile excitement; the secretions of the mouth are diminished, and the tongue uniformly red and dry; pulse 110; wounds healthy; bowels not yet relieved. Let the powder be repeated; continue the draughts. At four o'clock somewhat better.

24. A very bad night. He complains now of pain in the head. While dressing the parts, the patient made a sudden spring from the bed, and became utterly unmanageable, except by the united efforts of four men. We succeeded in finishing the dressing while yet struggling, and by persuasion got him into bed. He had not lain there five minutes, when with one bound he leaped furiously upon the floor, and knocking his hands most violently against the bedstead, succeeded in freeing himself from "those crabs" (the splints,) expressing, at the same time, his de-

termination to fly from his "ruffianly and execrable tormentors." This frenzy continued till two o'clock the next day.

Let blood be drawn to ℥ xx, and if the delirium and febrile excitement do not abate in some degree, let the venesection be rereated to ℥ x. more; and let gr. ij. of opium, and gr. iij. of calomel, be given after the first bleeding, and repeated every six hours;—pounded ice to the abraded scalp; and to prevent him doing himself mischief, let him be secured.

25. A very turbulent night. The first bleeding made no sensible impression, the second, however, subdued him. From two o'clock till four, his delirium gradually subsided, till he sunk into insensibility. His glassy lack-lustre eye was fixed with vacant glare on space, and indifferent to surrounding objects, he lay without any other sign of life than respiration, supine upon his bed.

It was evident that depletion had been carried sufficiently far. It was resolved, therefore, first, to exhibit stimuli; secondly, when re-action was brought on, to evacuate the bowels, as they had not yet responded to our frequent calls; and thirdly, to keep him under the influence of opium. These things were satisfactorily effected, and the hope of a happy issue from his calamity became rekindled in the breasts of his friends.

26. It was upon the whole a better night than the last; "the simple and compound motions," to use his own expression, were passed involuntarily. His face improves, but his hands appear to be influenced by the want of power in the system. He is decidedly better; let him continue to take of tincture of opium ʒ ss. every six hours, and the effervescing draughts, *urgente situ.*

27. Constitutionally better; the granulations appear irritable, and one of the collateral digital branches of the deep palmar arch gave way; pressure on the radial artery arrested the hæmorrhage. Let the surfaces be dressed as usual.

From this time he went on gradually mending, the healing of his hands keeping pace with the improvement of his general health.

July 21. Up to this time the wounds have been dressed as usual with the flour, &c.

25. He went into the country, and

August 10. Returned to the duties of his situation.

The following case, reported by *The Lancet*, was received into Guy's Hospital, under Mr. Morgan's care.

Case 4th. "William Lee, aged 34, admitted September 7, in consequence of having received a severe scald on the evening previous, from soap-lees; the left side of his face and the back of his left hand were considerably injured. On his admission he complained of considerable pain in the parts affected, and in his head; there was likewise a large vesicle on the back of his hand. The parts were ordered to be well covered with flour, and the bowels not being open, to take a dose of house-physic.

"8. Expresses himself considerably relieved; immediately after the application of the flour he was much more easy. The vesicle on the hand to be punctured, so as to allow the fluid to escape gradually.

"11. Wound on the hand and face begining to suppurate; not much pain in the head; ordered a dose of castor oil; continue application of flour.

"14. Going on well; he keeps the parts well covered with flour, from which he derives great benefit; wounds healing.

"17. Still improving; wound to be dressed with simple cerate. Under this plan of treatment he recovered so far as to be able to leave the hospital on the 21st.

"Flour is now generally used in this hospital in cases of burns and scalds, and its application is followed by the most decided benefit."

The subsequent case is one of very extensive adhesions after a burn. I have translated it from *La Lancette Française*, and given it in this essay, to show how very horrible a condition the patient may be reduced to if the greatest care is not taken to prevent the accretion of parts. The case would be more interesting if its termination were known, as it would then be an indication for the probably successful treatment of contractions after burns and scalds.

Case 5th. In the ward of St. Louis, of the Hopital De La Pitiè, is a child, aged eight years, enjoying perfect health, with the exception of the inconvenience about to be described. The child was about four years old when the accident happened. The means employed for the treatment of the burn, and the prevention of adhesions, are not known, but a simple inspection of the part, would induce the belief that the cure was left solely to nature, and that in a case where her efforts are constantly prejudicial. The loss of the left eye is the least grievous result of this negligence. The external surface of the inferior lip adheres to the integuments which cover the sternal extremity of the clavicle and of the left second rib. All the skin of the chin and neck is converted into a large bridle, in the middle of which, the moveable projection of the jaw may be felt. Along the median line of the lower lip is a gutter so deep that the saliva flows continually down it on the chest. Where the mucous membrane is immediately continuous with the integuments, these two membranes have preserved the appearances which are proper to them; nevertheless, the contact of the saliva appears to have affected the skin. The inferior alveolar arch projects outwards, and the two middle incisors, and two molar teeth on each side, only remain. The incisors are white and solid, but they are directed obliquely forwards. The molars are black and loose, especially on the left side. These conditions of the teeth are the effect of continual exposure to the action of the air, and the absence of the lip, which, in the ordinary condition, sustains and protects them.

The left nipple is drawn about an inch upwards from its usual position; the ribs appear also to have yielded to the traction; indeed this side of the thorax is more projecting than the other. The head is moderately bent, and it can perform all its motions except extension. The shape is not deformed: the child can leap and run with facility; but its speech is hardly intelligible. One thing worthy of remark is, that a very imperfect mastication, and the almost continual loss of a secretion so precious as the saliva, have in no-wise altered its constitution.

M. Lisfranc, it is said, founds, in part, the necessity of an operation on the dangers to which the patient would be exposed by the lengthening of the cervical column. It is known that it has certain dimensions to acquire, and that the cicatrix of a burn is the most inextensible of tissues, but we cannot coincide with the fears of M. Lisfranc, as to the compression of the spinal marrow by extreme flexion. For four years that the cicatrix has opposed the growth of the cervical vertebræ, this columnar flexion has not even commenced. Nor do we indulge the hopes of the surgeon in chief of La Pitiè, as to the results of the operation. He proposes to fix the thorax, and maintain the head in the greatest possible extension. . M. Lisfranc will doubtless do all that can be done in this case; but M. Delpech has cited very singular examples of the invincible tendency which there is in cicatrices to be reproduced, and he has mentioned some unsuccessful ones he has himself had.

June 2. M. Lisfranc proceeded to destroy the adhesions by an operation. A semicircular incision, with its concavity upwards, was made in the tissue even of the cicatrix, five or six lines from the labial mucous membrane. To the left this incision was prolonged as far as an inch from from the anterior border of the acro mion, because on this side the bridle is most extended. The right is almost entirely free. The operator continuing his dissection parallel to the known plane of the inferior lip and chin, cut these two parts in the thickness of the cicatrix.

Lastly, he proceeded with extreme deliberation, lest the bistoury should penetrate abruptly the thinner parts, and wound some important vessel. Immediately after the operation, which lasted thirty-six minutes, the child could carry its head freely backwards, and he already articulated with greater distinctness, though the lower lip was far from having gained its wonted position. They endeavored to carry it back by pressure from below upwards, by means of a little bandage of diachylon. The wound will be simply dressed. Extension of the head will be maintained by means of the posterior strings of an under-vest, which is itself sewn to a pair of drawers.

With this case then I conclude my "Essay on the best Treatment of Burns and Scalds." The plan proposed may also have been suggested by others, but of this I am not aware; my observations are founded, not upon the ideas of authors, but on experience, observation, and reflection. I consign, therefore, this attempt to improve this part of surgery, to the members of the surgical profession, believing in the truth of the sentiment, that "simplicitas, chirurgiæ anima est."

Injuries of the Skull and Brain.

To the Editor of the Lancet.

Sir—In No. 405, p. 312, of your valuable journal, is an interesting case of compound fracture of the cranium, with laceration of the brain, communicated by Mr. Rudkin, of Brigg, in Lincolnshire; in which, considering the severity of the injury, life was certainly much protracted; although, from the little constitutional derangement which followed, there was reason to suppose, that but for the occurrence of hæmorrhage, the patient would ultimately have recovered.

If, however, you can conveniently afford me space for the insertion of the two following cases, which I have as briefly as possible extracted from my case book, I think they will be found equally interesting and illustrative (the second particularly so) of the severe lesions the brain may sustain, and yet of those lesions being followed by a greater protraction of existence, and by comparatively but trifling disturbance of the cerebral functions.

I am, Sir, your, &c.

Henry K. Randell.

Rotherhite, July 24, 1831.

Case 1.—*Compound Fracture of the Skull, with Depression, and wound of the Dura Mater.*

William Frost, a healthy lad, æt. 18, came to me on the afternoon of Saturday, June 20th, 1829, in consequence of having had a blow on his head, from the falling of a loose tile from the roof of a corn granary. The accident which happened about a mile and a quarter from my house, had occurred rather more than an hour previously to my seeing him. His playmates, who accompanied him, informed me "that he was knocked down by the blow, and remained in a state of insensibility for about a quarter of an hour. Upon recovering, he complained of feeling very sick, but did not vomit. The head bled profusely, to stop which, and remove the sickness, they had laid him upon some timbers in a neighboring canal, and immersed the bleeding side of his head in the water. He then sat down for a short time upon the bank, and after the faintness and giddiness had subsided, he got up andsaid he would go to the 'doctor's,' and get the wound 'dressed.'" Upon removing the hair, a large ragged wound of the scalp, about two inches in length, presented itself, situated just over the middle and superior portion of the left parietal bone; and on introducing my finger, I felt an extensively comminuted fracture of the skull.—The fractured portions were deeply depressed, so much so, as to be nearly half an inch below the level of the surrounding bone. The blood which issued freely from between the depressed portions, required a perceptible impulse from the pulsation of the brain. The boy did not then complain of much pain in his head, but said he felt *as if he had a ton weight pressing upon his brain, which he thought had been increased by the jar which he experienced in walking to my house.* The pupils were considerably dilated, but contracted very readily on being exposed to the stimulus of a strong light. The pulse was 90, laboring, and full. He was, however, perfectly sensible, and answered all the questions I put to him most distinctly and rationally, and without the slightest hesitation. I ordered him to be carried home immediately, (distant about half a mile,) and directed his mother to place him in bed, with his head elevated, I myself promising to follow and bleed him, which I did to sixteen ounces. Whilst he was being carried home he became comatose. The pulse rose to 100 during venesection, and before I had taken six ounces, he again became perfectly sensible. I requested that all light and noise should be excluded, and the following medicines immediately administered.

℞ Pulv. jalapæ, gr. xv.
Hydr. submur. gr. vj; ft. pulvis.

An obstetric case, at which I had previously been in attendance, obliged me to leave him for a short time, and this, together with another prior engagement, prevented my visiting him for two hours and a half. I then found him perfectly sensible, but complaining of pain in his head, and feeling very sleepy. The pupils, although much dilated, were still obedient to the stimulus of light, the pulse had fallen to 92, and had again become laboring and full, and he had voided a considerable quantity of water. Having previously had the head shaved, I proceeded to remove the depressed portions of bone, by dilating the wound of the scalp, and just reflecting the pericranium upon each side, sufficiently to allow of the use of the elevator, without the risk of injuring that membrane. Upon so doing, I found the comminution to be very considerable, and the depression of bone, in one part of the wound particularly, much greater than I had expected. Four detached portions of bone were carefully removed by the forceps. The fifth portion, about an inch and a quarter in length, consisted of about one-half of the internal table only. This portion was fixed vertically in the centre of the wound, and had perforated the dura mater to the depth of three quarters of an inch. Upon removing it, copious hæmorrhage followed. Two other considerable fragments were then removed with the elevator, and the wound was carefully sponged. Some blood had become extravasated between the dura mater and cranium around the margin of the fracture, and this was gently scraped away with a dressing-case spatula. The hæmorrhage which issued from the anterior meningeal artery, was arrested after the lapse of an hour, by the continued application of a sponge, wetted repeatedly in cold water. The edges of the wound were then approximated by straps of adhesive plaster, and a pledget of lint was laid over the whole. Immediately after the removal of the portion of bone which had perforated the dura mater, the boy exclaimed, "Dear me, how light I feel, *the weight is all gone.*" During the operation, he had, repeatedly, convulsive twitchings of his arms and legs, and towards its close, owing to the hæmorrhage, which had been very copious, he became very faint. He was then placed in bed, and the head was raised and covered with linen, wetted with cold water, which I directed should be re-applied every quarter of an hour. The most perfect quietude and complete exclusion of light were enjoined, and only a gruel diet permitted. The pulse had now sunk to 68, and was soft and compressible; he was perfectly easy, and in half an hour fell fast asleep. Fearful of the recurrence of hæmorrhage, I continued to watch him the whole night. He slept soundly until two o'clock, when he awoke complaining of thirst. Some toast and water was administered, after which he again slept without waking, until half past five o'clock, when he passed a copious alvine evacuation. But to abbreviate my report as much as possible, it is only necessary to state, that for the first five days he became the subject of considrable febrile excitement, which required copious and frequent venesection, and the most strictly antiphlogistic measures for its reduction. After that time he continued to make daily progress towards recovery, till the morning of the 21st day from the occurrence of the accident, during which time the wound had united into two-thirds of its extent, and granulations had arisen upon the surface of the dura mater, and had begun to inosculate with those shooting from the pericranium. A variety of pressing engagements, however, prevented my visiting him until the afternoon of that day, when I found him restless and complaining of pain in his head, the face flushed, and the pupils more dilated than they had been for some days previously. He was also suffering from uneasiness and a sense of fulness at the epigastrium. Having gone on so favorably hitherto, I little expected to find such a manifestation of untoward symptoms at so protracted a period, and his mother having assured me that he was as well in the morning as he had been all along until within two hours previously, I immediately suspected something improper in the shape of diet had been given him; upon strict inquiry the poor fellow, more honest than his foolish parent, confessed that he had eaten nearly the whole of a currant dumpling, which had been made in a common-sized tea-cup. It is almost needless to state the particulars of what followed. In less than five hours after my seeing him, he was comatose and insensible. Bleeding, leeching, purging, and cold applications to the head, were immediately and repeatedly had recourse to without effect. On the following morning, the wound, which before presented a healthy and florid aspect, and had discharged healthy pus, was now pale and dry, the granulations had a flaccid and spongy appearance, and from them a thin and ill-conditioned discharge issued. On the 23d, he appeared the subject of repeated rigors and convulsive twitchings, and on the evening of the 25th he expired. Thus, humanely speaking, was this interesting case sacrificed to the folly of his ignorant parent.

Post-mortem Examination.

Upon reflecting the scalp from the left side of the head, an oval opening, equal in extent to a full-sized pigeon's egg, was exposed. The long diameter of this opening was parallel with the sagittal suture, and anteriorly it extended nearly as far forwards as the coronal. The removal of the calvaria exposed nothing very particular upon the surface of the dura mater, except a very strong adhesion to the under surface of the cranium superiorly, and also around the edge of the fracture. The wound occasioned by the protrusion of the fractured portion of bone was nearly imperceptible, being externally covered by dried granulation, and internally only presenting a slight indentation of about half an inch in extent. Beneath the membrane itself, there was a copious nd diffused effusion of pus, extending over every part of the external surface of the tunica arachnoides. This membrane was opaque also in several distinct spots. There was likewise an effusion of pus beneath the pia mater, just at the spot where the bone had perforated the brain, and copious effusion of serum into the ventricles and at the base of the brain. The brain itself was much softened and pale; the vessels of the pia mater covering the cerebellum were gorged with blood, and the lesser brain itself so softened, that it could scarcely be removed without the risk of laceration. On cutting through it transversely, some few drops of perfectly-formed pus were found in its very centre. In addition to these destructive effects of inflammation, there was a copious effusion of serum all the way down the spinal chord.

Case 2d.—Compound fracture of the Skull.—Protrusion of the Brain, and dreadful destruction of the Face, from the accidental discharge of a Fowling-piece.

About half past ten, on the morning of Sunday, January 30th, of the present year, I was hastily summoned to James Wardill, ætat. 19, who, I was informed, had accidentally "blown out his brains," by the incautious discharge of a musket, whilst shooting sparrows. The accident, which happened on the banks of the Commercial Docks, about an hour and a half previously to my seeing him, had occurred in the following manner:—The patient was standing with the butt end of the gun just resting upon the toe of his left foot; the trigger was unfortunately full cocked, and in laughing at his companions, who were in vain attempting to ascend the banks on account of the frost, his knee bent forwards against it, and the piece, which was charged with small shot (No. 6,) immediately went off. His hat was instantly blown off into the air, while he himself fell backward to the ground. For a minute or two he appeared dead, but soon recovered himself, got up, and walked to his house, distant about a quarter of a mile. When I reached the house, I found him sitting in a chair, quite sensible, but very faint. and presenting a most horrid spectacle. His appearance was indeed ghastly, and the face was dreadfully lacerated. The charge had evidently passed in a perpendicular direction upwards, carrying away a portion of the upper lip, the left os nasi, with its cartilages, a portion of the nasal process of the superior maxillary bone, the whole of the left frontal sinus, and a considerable portion of the orbital process of the frontal bone. The integuments of the forehead were also carried away to a great extent, leaving the frontal bone merely covered by periosteum, which was incrusted with blood, and blackened as if burnt. It appeared as if the adductor oculi, from the violence of the shock the head had undergone, was paralysed, for the eye was permanently turned towards the outer canthus, and thus escaped injury. Through the aperture, in the orbitar process, about a table-spoonful of brain had issued; this was removed, and with it a small fragment of bone. Very little blood had been effused, and the parts were fairly blackened and burnt. As soon as the loose brain was taken away, the cerebral mass was clearly seen pulsating through the aperture. The countenance besides was pale, and the uninjured features much shrunk. The poor fellow complained of but little pain, but he was tremulous and faint; the pulse was at 60, but very feeble, and the surface of the body was cold and damp. I immediately ordered him to bed, the head to be kept elevated, and all light and noise to be excluded. I contented myself with merely sponging the injured parts clean, with warm water, and covering them with lint, spread with simple cerate, and then left him, promising to return in a few hours.

From the state of facts which I have described, particularly the lacerated condition of the brain, it was evident that a very considerable portion of the charge had entered the skull, and that none at all, or scarcely any part of it, had passed between the dura mater and cranium, and yet nearly two hours had elapsed from the occurrence of the accident, without the supervention of any other untoward symptom, than that of *comparatively slight collapse.* Before I left the house, his hat, which had been picked up near the spot where he fell, was brought to me. Upon examining it, twenty-seven shots were found beneath the silk, covering the external part of the verge.

At half past three in the afternoon I again visited him. All symptoms of collapse had disappeared; the surface generally was warm, and he complained of a little pain in his head, which he said felt confused, but he was otherwise perfectly sensible, and expressed his fears that it was all over with him. The pupils were not at all more dilated than usual, but the pulse had risen to 96, and was rather full; and he complained of heat and tenderness of the scalp. At my first visit I had requested the head to be completely shaved, and I now directed that a bladder of ice-water should be constantly applied to it. About half an hour after the bleeding, a powder, consisting of a scruple of jalap and ten grains of calomel, was administered. At ten o'clock at night, I visited him for the third time; the pulse had regained its fulness and frequency, and the same symptoms had manifested themselves, with the addition of a disposition to coma; I therefore bled to twelve ounces, when he again became faint. The bowels had not been relieved, and a common enema was in consequence injected. A saline cathartic mixture was also directed to be given at intervals of four hours, to increase the action of the medicines, which had been previously administered.

Early on the following morning, between six and seven, I again saw him, and found that he had passed a tranquil night, having slept for some two or three hours at a time. The head, as might be expected, was a little painful, but there was much less heat and tenderness of the scalp. All disposition to coma had disappeared; the pupils were perfectly natural, and the pulse 88, soft and compressible. The bowels had been copiously relieved, and upon the whole he felt very comfortable, excepting a stiffness and dryness of the face; to relieve which I directed that it should be gently sponged with tepid water every four hours, taking care, however, not to remove the dressings. Nothing more in the shape of diet than thin gruel and toast and water were allowed him.

At two o'clock, P. M. I found him precisely in the same state; all was tranquil, and he had experienced much relief from the tepid sponging.

At ten at night, however, it was far otherwise; he had been much disturbed by the neighbours quarrelling under his window, and I found him complaining of more pain in his head than he had hitherto had; his pulse had risen to 116, and was hard and full; the scalp was hot and tender, and there was a general increase of heat upon the surface of the body, and a great deal of thirst. I bled him immediately to sixteen ounces, and ordered him to continue his remedies as before. But lest I should occupy too much space in your widely-circulated Journal, I will not trouble you with the daily reports, as I have entered them in my case-book. I will, therefore, content myself with stating, that for the first fortnight I regularly visited him three times a day, although at the distance of a mile from my own residence, in order that I might carefully watch every untoward symptom as it manifested itself, and, if possible, immediately check it. During that time I found it necessary to abstract altogether nearly 110 ounces of blood. After that period all inflammatory tendency appeared to have completely subsided, and the boy was so far free from any thing like immediate danger, that I really began secretly to flatter myself with a hope of recovery, although with his friends, with whom I found great difficulty in enforcing obedience to my directions, my prognosis was exceedingly guarded. On the third day after the accident, an emollient poultice was applied to the face, which was continued for four days, and the wound afterwards carefully dressed with simple cerate. The burnt edges soon sloughed away, and granulations of a healthy character made their appearance. From the expiration of the first fortnight to the conclusion of the following fourth week, making six weeks from the occurrence of the accident, he continued to improve, and cherished hopes of recovery. At the termination of that period the deformity of the face, through the contractions of the granulations, had very much diminished; the adductor oculi had recovered its power, and vision was in no way impaired. Towards the close of the seventh week, however, he became the subject of irritative fever, which assumed the intermittent form, and was exceedingly irregular in its duration. It was moreover accompanied with excessive tenderness of the scalp generally, so much so, that the hair, which had been allowed to grow, he would not permit to be shaved off on that account; notwithstanding which ice-bladders were kept constantly applied. He likewise became exceedingly petulant and morose in his temper, and would swear most profanely, if only asked to take nourishment. During the continuance of this state, which remained unchecked by any of the remedial measures which I adopted, the granulations became shrivelled and pale, and speedily dried up. The Schneiderian membrane of the nasa, which before secreted muco-purulent matter, also became pale and dry, as also the lining membrane of the mouth, so as to give the appearance of hair-lip, only that the situation of this cleft was rather more lateral than usual. Through the aperture in the orbitar process of the frontal bone, which was large enough to admit a full-size hazel-nut, the brain could be still distinctly seen pulsating, and detached all around nearly to the extent of an inch. That part of it immediately exposed to view was black, and appeared as if covered with a hard, dry scab, whilst all around it was of a beautiful deep-pink colour. A few days after the accession of irritative fever this scab, or slough, separated and came away, and was quickly followed by a copious discharge of pus, *but not the smallest fragment of bone or any other foreign body*, neither could any be felt with a probe. This discharge of pus was productive of great relief to his symptoms, and he continued to improve for about a week, during which time his irritability much diminished, and he was more sociable with those about him. In a very short time, however, he relapsed, and with the return of fever there was a disposition to coma, which if roused from he would swear most dreadfully. At night low muttering delirium supervened, under which state he would frequently get out of bed, tear the dressings from his face, and mourn and groan most piteously. Towards the close of the ninth week, he was attacked with diarrhœa, and in a day or two afterwards the integuments of the back gave way and sloughed to a considerable extent; emaciation also, which had commenced since the accession of fever, proceeded very rapidly. The diarrhœa remained unchecked in spite of all that was done for it, and he lingered on till the expiration of the fourth day of the eleventh week from the occurrence of the accident, when he expired.

Post-mortem Examination.

During the movement of the body from the bed to the inspecting table, a quantity of pus issued from the opening in the frontal bone, and on carefully sponging it away two fragments of bone were seen lying loose near to the aperture. The removal of these by the forceps was followed by the discharge of about a teaspoonful of pus. On removing the calvaria, the adhesions of which to the dura mater were not stronger than usual, three shots were found near to the middle and upper part of the parietal bone. Each of these were surrounded by a small zone of inflammation, and beyond these there was also a small semicircular line of redness, about two inches in length. Upon detaching the dura mater in the usual way, several other shots were found upon the left hemisphere of the brain, immediately beneath the dura mater, each surrounded either by a small zone of inflammation, or by a little suppurating cavity. On cutting through this hemisphere two abscesses, filled with pus, were laid open; the first, the size of a walnut, was situated on the upper part of the brain, nearly in the centre of the centrum ovale; the other, the size of a common nut, more anteriorly and inferiorly; a third was found within about an inch of the frontal aperture, and was the one which contained the fragments of bone that had escaped during the movement of the body. Besides these abscesses, several shots were found scattered about in the substance of the left hemisphere, twenty-three of which were collected, and are now in my possession. The right hemisphere of the brain, except being rather more injected than usual, was apparently healthy. There was a trifling effusion into the lateral ventricles, and also at the base of the brain, but no other unhealthy appearance was detected.

Results of the dissection of three double monsters. By D. C. Mayer, *Professor at Bonn.—(Zeitschrift für Physiologie.)*

The first of these monsters was a calf, which had come to maturity, and lived several hours after its birth. It had two complete heads and necks which were separate, but the two bodies were so joined together that the double vertebral column could be felt beneath the skin as far down as the pelvis. It had two hearts. The right subclavian artery in the animal of the right side came off from the pulmonary artery; the two primitive carotids and the left subclavian were furnished by the aorta. The arteria innominata served for the common trunk of the two primitive carotids.

The second monster was the fetus of a sheep, with a single head but double vertebral column, and eight complete legs. The heart was single; the pulmonary artery furnished the subclavians; the œsophagus and trachea formed but one canal.

The third monster was also the fetus of a sheep. The heads were double, but at the occiput were so confounded together as to have but one occipital foramen. The body was natural. The œsophagus and trachea formed but one canal. The right pulmonary artery was furnished by the aorta.

On the physiological action of counter stimulants, by a Physician at Macerata, 1826. *(Nuovo Giornale dei letterati.)*

The conductor of the Italian journal asserts, that neither the doctrine of M. Santarelli, nor the ideas by which M. Santini has endeavored to sustain it, have been able to convince him of the error of the opinion he has formed, which is, that the time has not yet arrived, when the science of medicine can be established upon an unerring and solid basis. He says that the new doctrine of M. Santarelli, is founded upon a principle which has always appeared to him hypothetical, and which is borrowed from the writings of Brown, upon " Excitability." According to this principle, the systems of organs are passive and inert, and their actions are only produced and sustained by two orders of agents, which our author calls stimulants, and counter stimulants. Can it be admitted, that life is the result of the action of external causes, and not an *inherent attribute* of organization? If we examine bodies really or apparently dead, we shall see that in the last, the fibres maintain their action for a certain length of time, and that in the former for instance, in women who die *enceintes*, the uterus exercises its proper functions, and expels the living fetus. These facts certainly disprove the new doctrine of Brown, upon the passiveness of the muscular fibres, which serves as the foundation of the theory of M. Santarelli. The Italian Journalist next examines the action which M. Santarelli attributes to counter stimulants which are made to play a conspicuous part as well in life and health, as in disease and death. Brown considers internal and external agents whether ponderable or imponderable, but as stimulants acting upon the organization according to their nature, their quality, and their influence. Rasori profiting by experience, has modified the principles of his master, and created a new series of causes, not of life, but of diseases, which he names counter stimulants. If the first series of agents put in operation the action of life by animating the vital principle, or maintaining its excitability, and preserve the health within certain limits by the slow consumption of those agents, or produce sickness by their too strong or too weak action; the second series deranges the health by a depression of the strength or by a weakening of the normal action. This idea was to Rasori a luminary in the path of medication. He discovered that medicaments were divided into those which depress, and those which sustain and re-animate the powers of life, consequently that by a knowledge of these contrary actions acquired by experience, we can restore the body to its normal state. This is the origin of the stimulant and counter stimulant or depressing plans of medication. The professor Santarelli has not discarded any of these ideas. He only remarks that in a normal state, the counter stimulants act differently from what they do in a state of disease. Which means, that those substances which in a state of health, the school of Brown consider as counter stimulants, only serve to depress or moderate the action of stimulants; whilst in a state of sickness they may either depress or exalt the vital action, and produce dropsies, fevers, and inflammations. Thus we see that according to M. Santarelli, we can have fevers and inflammations of stimulation as well as of counter stimulation, and that we must employ in fevers and inflammations proceeding from stimulation, counter stimulating remedies, and in those caused by counter stimulation we should use stimulating medicaments.

After the exposé of the system of M. M. Santarelli and Santini, the Journalist addresses to them the following questions:—

Does there exist in any substance the specific power of acting on the human body in a state of health in a different manner than in a state of sickness? For example, can we conceive that wine which taken in two great quantities in a state of health, oppresses the vital powers, can loose its stimulating qualities and become a counter stimulant?

He doubts if digitalis, squills, and scammony which are employed in dropsies as hydragogues, excite inflammation by counter stimulation, and he does not think it expedient to substitute stimulants for them. On the contrary, he thinks that the immediate action of these substances upon certain parts, is to produce irritation and inflammation. He does not adopt the opinion of M. Santarelli, that caloric is a stimulant, and oxygen a counter stimulant, and that nature has united these two substances in order to make the action of one temper or neutralize the action of the other. Experiments made upon men and animals, prove the respiration of pure oxygen gas, quickly excites various degrees of inflammation, and that the muscular action is energetic in proportion to the oxygenation of the blood.

Das Aufrechterscheinen der Gesicht subjecte—par *Ar. Ad. Berthold* à Gœttingue. Of the correct appearance of objects notwithstanding their reversed position upon the retina.—By AR. AD. BERTHOLD, &c.

The author tries to explain the above phenomena by the general feeling of the visual organs. The eye he says, has a sentiment of heaviness, of which we are conscious whenever we attempt either to raise it, or to move it from side to side. Thus in order to see the height of an object, we are obliged to elevate the eye in a direction contrary to this feeling of heaviness, and to see its base we let fall the organ by its own weight, so that it is this consciousness of weight, or the absence of it, which enables us to judge of what is high and what is low. From this it will be seen, that it is not the visual act itself, but the innate tact of the organs themselves, which enables us to perceive objects in a correct position, and in one contrary to that in which they are impressed upon the retina.

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FOREIGN BODIES IN THE TRACHEA.

THE sagacious Theophilus Bonetus counseled bronchotomy in the case of a boy who had a small bone lodged in the trachea; but, unfortunately, the surgeon with whom this erudite anatomist consulted, opposed the operation, and the child died. He says, "Puer septennis, Aurifabri Genenensis Dom. Ganier filius, anno 1650, oryzam juri carnium incoctam comedens, ossiculum deglutit, quod à consueto tramite deerrans, asperam arteriam subit, illi impactum hærens, digito locum designabat, circa colli medium: hinc difficilis cum tussi anhelitus, maxime in *inspiratione*, dolorque punctorius: cum nec progredi nec regredi ossiculo daretur, bronchotomiam suasi, alteri medico ineptam visam, et sexto demum die, sed ab obitu factum: exemptumque os teres, aereæ monetæ crassitie, triplici augulo parietibus arteriæ asperæ affixum: Spes erat salutis in mature instituta operatione."* Willis likewise recommended the operation in a similar case, but he was opposed by the medical men who were in attendance.† Notwithstanding such sound advice, Muys, (who it may be presumed was acquainted with the immortal works of Bonetus and Willis,) allowed a patient to perish from suffocation, induced by a bean in the trachea.‡ The first case in which bronchotomy was performed, for the removal of a foreign body from the trachea, is detailed by Verduc. The operator made a free incision through the trachea, and extracted from it a small bone.§ Raw was the next person who successfully extracted a foreign body (a bean) from the trachea. Heister, who ascertained this fact from Raw, also performed bronchotomy, and extracted a portion of a mushroom from the trachea. After describing the operation of bronchotomy, he says, "Ainsi que j'eus le bonheur d'extraire dans cette ville, (*Helmstad*) un morceau de champignon cuit, qui étoit tombé dans la trachée artére d'un homme, pendant qu'il avaloit en riant, a grands traits, un bouillon, où se trouvoient, parmi beaucoup d'autres choses, des champignons: cet homme étoit sur le point de suffoquer."[*] After such tests of the beneficial effects of this operation, in cases otherwise necessarily fatal, it would be thought that its utility was established; nevertheless, in March, 1759, some of the ablest surgeons in France, among whom was the illustrious Bordenave, opposed the sagacious Louis, and would not allow him to operate on an infant who had a bean lodged in the trachea. He says, "M. Bordenave, qui avoit vu la malade, vint le vendredi matin m'apprendre cette mort; il m'avoit prévenu en demandant aux parens l'ouverture du corps. Il la fit ce jour là même à six heures du soir, devant une nombreuse assemblée que le bruit de ce cas y avoit attirée. Après avoir fait une incision longitudinale à la peau et à la graisse le long de la trachée artére, entre les muscles sternohyoïdien et entre les deux bronchiques, il fendit la trachée artére en long, en coupant trois de ses anneux. Au même instant tout le monde vit la féve, et je la tirai avec de petites pinces. Ou reconnut par la facilitaté d'extraire ce corps étranger, que l'opération auroit eu sur le vivant l'effet le plus prompt et le plus salutaire."[†]

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* Sepulchretum sive Anatomia Practica, Tomus Primus, lib. ii. De Affectionibus Pectoris, sectio 1. De Respiratione Læsa, Observatio 1, p. 483. Genevæ, MDCC.

† Pharm. Rat. Part ii. sect. 1. cap. iii.

‡ Pract. Chir. Rat. Dec. vii. Obs. ix. 1690.

§ Path. de Chirurg. tom. ii. chap. 26. Amsterdam, 1717.

From this time no surgeon has hesitated to perform bronchotomy, when the evidence of a foreign body in the trachea has demanded it; but there are difficulties connected with this point, which are not always easily solved, and which the following cases are intended to illustrate.

Case 1. In March, 1821, a woman from Smithfield was brought to the Richmond Hospital, Dublin, nearly exhausted from difficult respiration. Her friends informed me, that a few minutes previously, while eating her dinner of boiled pork and cabbage, she suddenly became affected with symptoms of suffocation. With as little delay as possible, I thrust the forefinger of my right hand into the fauces, and perceived a hard substance lodged between the epiglottis and rima glottidis, which with a crow-billed forceps I extracted, and on examination found it to be a piece of bone, of an irregular figure, and about the size of a filbert.

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[*] Institutions Chirurgie, tome troisieme, p. 149.

[†] Memoires de l'Academie Royale de Chirurgie, tom. xii. p. 299. M.DCCLXIV.

Case 2. On the 17th Feb. 1828, a soldier's wife swallowed a pin, when she was immediately seized with spasmodic and irregular respiration; her face became livid, and she appeared as if about to die. Being on the spot, I perceived her situation, and with as little delay as possible passed my finger into her throat, and with considerable difficulty extracted the pin, which lay across the rima glottidis.

These two cases fully demonstrate the dreadful symptoms which ensue from foreign bodies coming in contact with the larynx. They excite spasm of the muscles, and thus by diminishing the rima glottidis, produce suffocation.

Fabricius Hildanus mentions a case similar to the first; a young man swallowed a bone, which lay in contact with the larynx; he was was suddenly seized with convulsions and died.*

Case 3. A patient, with anthrax, under the care of Mr. Carmichael, in the Richmond Hospital, Dublin, in the year 1822, while eating his dinner of boiled mutton, was suddenly seized with difficult respiration, and before Mr. Belton, (who was then Mr. C.'s assistant,) arrived, from an adjacent ward, he had suffocated. I assisted Mr. B. in the post mortem examination, and we found that death had been caused by a tough piece of mutton, which completely filled the mouth of the larynx.

The following case, by Thos. Bartholinus, is similar to this,—"Sueno Olai, juvenis robustus, sed pallida faciei calore, annorum 19, cum in cœna convivis, jussu hospitis inserviret, linguæ frustulum bubulæ, in patina residuum, clam et festinanter ori injecit, unde statim vox sublata et respiratio, nec caro degluta conatu ullo aut vi ulla potuit elice, antequam advocatur chirurgus, soffocatur. Postridie cadaver apertum fuit, inventumque est frustulum illud linguæ bubulæ, pondere unciæ unius cum dimidia, *inter epiglottida et laryngis* rimulam se insinuasse, totamque laryngem obturasse, tam arcte ut vix manu eximi potuerit; unde mirum non est subito et vocem cessasse et perisse respirationem."†

Case 4. Private James Smith, aged 37, of the 25th regiment, on the 11th January, 1828, was seized while at dinner with difficult respiration, and in a few minutes died. On examination after death, a piece of beef, as large as a pullet's egg, was found impacted in the upper part of the œsophagus.

Fabricius Hildanus mentions two cases similar to this. In the first, an infant was suffocated by the lodgment of a piece of hard cake in the œsophagus; and in the second, a man, by a piece of meat.[*] Nicol. Gul. P. Backers, in Miscell. Cur. mentions the case of a young man who was immediately suffocated by the lodgment of a piece of meat in the upper part of the œsophagus.

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* Cent. Obs. 36.

† Cent. 1. Histor. xi.

Case 5. In the summer of 1824, I assisted the late Mr. Todd in the examination of a child two years old, who had died of chronic laryngitis. On opening the larynx, we found a grain of wheat in the left ventricle, with tumefaction and engorgement of the mucous membrane throughout its entire extent. When the parents were informed of the result of the dissection, they recollected that seven months previously, (the period at which the disease commenced,) the infant had been playing in a granary, in which was deposited a large parcel of wheat.

Tulpius mentions the case of a man in Amsterdam, who had a piece of the shell of a filbert nut lodged in the larynx for seven years, during which time he had distressing cough and laborious respiration; but when the foreign body was ejected he perfectly recovered. Here are his words,—"Civis Amstelredamensis, septem ampliùs annos, divexatus ab indefatigabili tussi, traxit continenter spiritum, adeo difficulter: ut corpus ipsi summoporè emarcuerit. Sed ejecto tandem, per vehementissimam tussim, putamine, nucis avellano: duxit ilicò spiritim commodiùs; et evasit cellerrimê, quod vitæ intentabatur, periculum. Inhæserat autem hoc putamen (quod adæquabat unguem humanum) circa caput asperæ arteriæ; uti satis distincte indicavit æger."[†]

Phillipus Hæchstetterus relates a similar case. A man had a ducat of gold lodged in the larynx for two years and two months, during which time his voice was altered, and he had much cough and expectoration.[‡]

Louis asks, what situation do foreign bodies occupy, which are lodged in the larynx for a length of time? and thus replies, "L'Anatomie résoudra cette difficulté: elle nous montre une dépression à chaque côte de la glotte, entre cette overture et la face interne des ailes du cartilage thyroide;—les corps étrangers peuvent y séjourner assez long-temps et occasioner des symptômes différens, suivant la sensibilité des parties, plus ou moins grande dans chaque sujet. La situation du corps étranger, sa figure, son volume seront la cause d'une plus grande ou d'une moindre gêne."[§]

Case 6. On the 9th June, 1827, I visited a pensioner's son, aged 3 years, who, he informed me, had great difficulty of breathing for 16 days, which he attributed to swallowing a pea. The lower part of his neck was œdematous, and he complained of pain immediately below the thyroid gland. His breathing was very heavy, and his voice very imperfect. Frequently he would sleep for two hours at a time, and then be aroused by a spasmodic cough, producing lividity of the face, and threatening suffocation. I opened the trachea, extracted the pea, and saved the boy's life.

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[*] Cent. 1. Obs. 35.

[†] Observationes Medicæ, lib. ii. caput vii. p. 109. Amstelredami, clɔ. lɔclxxii.

[‡] Obs. Decad. vi. Cas. x.

[§] Op. Cit. p. 312.

Case 7. On the 4th of April last, Dr. Wright called me in consultation on the case of a female infant, between five and six months of age. He informed me, that three months previously the child had swallowed a piece of a cocoa-nut, which he had endeavored to dislodge by emetics and other judicious means, but without effect. The infant was emaciated and feverish, and though it had only spasmodic cough at intervals, still it had constantly more or less dyspnœa, and its voice was hoarse and feeble. The tracheal region was painful, and when the ear was applied to it, the rustling of the foreign body was very audible, particularly when the respiration was hurried. I confirmed the doctor's opinion respecting the propriety of bronchotomy, an operation, which after the failure of emetics he unceasingly urged, but the parents would not consent. On the 7th, the symptoms having become extreme, they made up their minds to the result of the operation, and at 1 o'clock I visited the child with Dr. Wright. At this time I entertained great doubts, whether it could bear the operation; but as otherwise it must perish, I soon determined on affording it the only chance for life which remained; therefore, with the assistance of Drs. Wright, Stevenson, and Craft, I proceeded to and performed the operation. When the trachea was opened, the little sufferer immediately became tranquil, and breathed freely through the opening. The foreign body did not show itself, and as the infant was exceedingly weak, I did not protract the search after it.

From this date until the 13th, she rallied wonderfully, and breathed freely through the wound, from which a great quantity of mucus was discharged. On this day the foreign body, (a piece of cocoa-nut about the size of a barley-corn,) was ejected in a fit of coughing, and a rapid recovery ensued.*

Dupuytren has performed bronchotomy three times for the extraction of foreign bodies lodged in the trachea. In two cases he extracted the body during the operation; in the other this could not be done, but it was discharged *per se.*

The above cases prove that foreign bodies can remain a long time in the trachea without producing death.

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* In this child the arteria innominata lay in front of the trachea, above the sternum; it was exposed in the inferior angle of the wound, and held down by the handle of a tea-spoon, (curved for the purpose,) while the trachea was opened.

In the case mentioned by Theophilus Bonetus, already referred to, the patient lived for five days with a small bone in the trachea; in those of Muys and Louis, also mentioned before, the children lived, one for three weeks and the other for three days.

Sabatier has very well explained why foreign bodies remain so long in the trachea without destroying life. He says, "Rien n'a plus contribué à jeter doutes sur la présence de ce corps dans la trachée—artère que les intervalles de tranquillité assez longs qu'avait la malade, ou pensait qu'il devait y causer une irritation continuelle qui ne permettrait pas les alternatives de bien et de mal que avoient lieu. Mais ces corps était lisse; il était descendu au dessous de la glotte, dont la sensibilité est sans doute plus grande que celle de la trachée, et ne causait d'accidens remarquables que lorsque, porte dans les mouvemens de la respiration vers la partie inférieure de la glotte, il venait en heurter les ligamens et en boucher l'ouverture, de sorte que l'air ne pouvait s'echapper avec sa liberté ordinaire. C'est a cette cause qu'il faut attribuer l'emphysème dont il a été fait mention, parceque l'air, obligé de renfluer dans les poumons, a dû rompre quelqu'une des cellules bronchiques, s'insinuer dans le tissu cellulaire de ce viscère, et s'etendre de bas en haut, jusqu'à la partie inférieure du cou dont il a soulevé les tegumens."* EDITOR.

GLEANINGS FROM FOREIGN JOURNALS.

Experiments made with the Virginia Snake Root. (Polygala Senega.)

[Continued from page 18.]

This medicine was administered to ten members of the Society of Experiment, in doses varying from two scruples to a drachm and a half, infused in from four to eight ounces of water; also to seven of the members, in powders, diluted with a small quantity of the same liquid, in doses of from 15 grains to one drachm. These experiments proved that the Senega acts as an excitant of the intestinal canal; that it produces congestions in all the viscera of the abdomen; and that it causes flatulence, rather than mucous secretions. In the greater number of cases it produced eructations, nausea, vomiting, pain and heaviness in the stomach, borborygmus, together with pain in the small intestines. To these symptoms were added, frequent discharges of wind, tenesmus, without the evacuation of fecal matter, some sticky stools, the entire loss, and sometimes the increase of appetite; gonflation of the belly, particularly of the epigastric region, together with great itching around the anus. In some cases M. Jœrg observed, as a consequence of the ingestion of this substance, a well marked augmentation of the natural heat, particularly about the head, together with heaviness and pain in that region; and he therefore concludes that it also acts upon the encephalon, and produces congestions in it. In other cases it augmented the activity of the circulation, and again it increased the urinary secretion. This last effect depended probably upon its action on the mucous membrane of the intestinal canal.

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* Médecine Opératoire, tome quatrième, p. 59, 60.

From what we have said it will be seen that the action of the Senega is far from being uniform. M. Jærg considers it as more efficacious than the valerian, and that its exciting properties are more decided upon the intestinal canal. The infusion appears to act particularly upon the head, the powder directs itself to the abdominal organs.

When this medicine is administered in small doses, its action continues from 8 to 12 hours, when in large doses, from 18 to 20 hours; therefore it should not be exhibited more than once or twice in the 24 hours. For an adult the proper dose is from a scruple to a drachm, either in powder or infused in water.

From these experiments we infer, that the Senega is indicated when we wish to increase the vitality of the intestinal canal. As it sensibly diminishes the secretions of the mucous membrane of the intestines, it might be useful in chronic diarrhœa, without inflammation, and in certain cases of colliquative diarrhœa. It is contra-indicated whenever there is congestion or inflammation of the abdominal viscera.

Experiments made with the flowers and root of the Leopard's Bane. (*Arnica Montana.*)

1. *Flowers.* Thirteen members of the society (9 men, 2 women, and 2 children) took the flowers of the Leopard's Bane, in doses varying from 2¼ to 36 grains, infused in from one drachm and a half to six ounces of water; by which it was shown that this substance irritates and inflames the alimentary canal from the mouth to the anus; that it irritates the œsophagus, the stomach, and the small more than the large intestines; and that its action is directed rather to the muscular fibres than to the vascular tissue of the digestive organs; from which it results, that it excites their contractile rather than their secreting or absorbing powers. "The exciting power of the medicament extends to the head, probably," says M. Jærg, "through the medium of the abdominal plexus of nerves, which comes immediately under its influence."

The excitation of two such important apparatuses as the head and digestive canal, necessarily produces secondary effects. These were, a marked acceleration of the circulation, an augmentation of the cutaneous transpiration, together with the other effects of a general stimulation. On the other hand, by reason of its action on the alimentary canal, this substance sensibly modifies the quantity and composition of the urinary secretion. The effect it produces on the pharynx and larynx excites cough, especially in those whose air passages are at all irritable. Its action is prolonged from 24 to 36 hours. The proper dose for patients of an irritable habit is two grains of the flowers infused in half an ounce of water; in common cases four or five grains may be taken. After its action has commenced, the dose should not be repeated before the expiration of 24 or 36 hours.

It results from what we have said, that the flowers of the Leopard's Bane should never be administered in inflammatory affections, or those accompanied with irritation of the head or abdomen. It acts favorably in cases of general and local debility, where it is desired to stimulate sluggish organs or parts affected with paralysis. It may be usefully employed when we wish to call up the action of the intestines, especially their muscular tunic; also in certain affections of the brain depending on effusion. "In short," says M. Jærg, "it is an excellent means of renewing the strength of the sensitive, locomotive, and circulatory systems. It should only be employed in chronic, never in acute affections."

An infusion of the flowers being applied to the skin, produced a burning, itching affection, followed by irritation, but without redness; kept in contact with it by means of sticking plaster, it caused violent itching, succeeded at the end of eight hours by a well marked redness, which soon disappeared. This property recommends it in cases where it is wished to irritate the skin without implicating the epidermis, as in the cheek or the neck. It is very effectual in cases of local paralysis, either in the form of fomentations, lotions, or baths. It is also useful to stimulate ulcers, which are about passing into a state of induration or gangrene.

2. *The Root.* The effects of the root of the Leopard's Bane are different from the flowers. Infused in water, it is not so irritating to the mouth, the œsophagus, the stomach, or the small intestines; it affects particularly the muscular fibres of the intestinal canal, but its chief action seems to be directed to the head. Consequently it should have preference in all cases where it is necessary to renew the organic strength without irritating the alimentary canal. It should be selected in chronic and colliquative diarrhœa, in preference to the flowers. M. Jærg says, the tincture is a better preparation than the aqueous infusion, and he has made the same remark of several other vegetable substances. He thinks the medicine under consideration might be useful in cases of atony of the stomach and alimentary canal. He recom-

mends it to be taken in doses of 25 to 40 or 50 drops every 24 or 36 hours. The infusion of the root should be administered in the same quantity as the flowers.

"To conclude," (says M. Jærg,) "the experiments I have made prove that the Leopard's Bane is a decided resolutive. It stimulates the absorbents, and acts as a derivative upon the brain; consequently it can be employed with success in cases of cerebral effusion, and against the induration of certain organs."

Experiments made with Camphor.

These experiments were made upon almost all the members of the society. At first the camphor was administered, dissolved in spirits of wine, in the proportion of one grain to eight drops. The doses varied from 4 to 30 drops. When taken in substance, from half a grain to 12 grains were administered. M. Jærg has drawn the following conclusions.

"Camphor acts primarily as an excitant of the digestive canal and the brain; its secondary action is upon the genito-urinary organs, the skin, and the circulating system. By reason of the volatile principle it contains, it acts as a strong diffusible stimulant. It produces a feeling of heat in the mouth, the stomach, and the intestines, together with an actual increase of the bodily temperature. Mixed with alcohol, its action is sensibly augmented. It also contains bitter and acrid principles, but their actions are very uncertain and difficult to be distinguished. When the volatile principle acts alone, its duration is very short, but when the bitter and acrid principles act upon the digestive canal, its effects continue for a much greater space of time.

"It results from what has been said, that the camphor, whether acting by means of its volatile, its bitter, or its acrid principle, is a powerful stimulant. It augments the heat of the body, produces sweating, accelerates the circulation, increases the force of the pulse, modifies in a remarkable manner the quantity and quality of the urinary secretion, and stimulates powerfully the organs of generation. The generally received opinion that camphor acts as a sedative upon these organs, is evidently incorrect; and," observes M. Jærg, "though it is often employed against stranguary caused by the action of cantharides, the observations I have made leave no doubt on my mind as to its injurious effect in all irritations of the genito-urinary apparatus. Camphor is contra indicated in cases of fever or acute inflammation of important organs, as well as in cases of compression of the brain, resulting either from effusion or depression, as it produces or augments the turgescence of the vessels. It is indicated in cases of general weakness, produced or continued from atony of the digestive organs, as it does not cause congestions in the viscera of the abdomen, and for this reason should be preferred to the valerian, the snake root, or the leopard's bane. One of the most constant effects of this substance is congestion of the nervous centre.

"When taken in small doses its action does not last more than three or four hours, so that when it is intended to obtain stimulation, they should be repeated every four or six hours.

"The proper dose is from half a grain to a grain, administered at proper intervals."

Experiments made with the Castor.

Those members of the society who had been found most susceptible to the action of medicines, were submitted to the experiments with the castor, amongst whom were the three females. From 5 to 20 grains were taken, without producing any other effect than disagreeable eructations; from which M. Jærg concludes that it is perfectly inert, and should be banished from practice.

Experiments made with Musk.

This substance was taken by nine members of the society, (amongst whom were two women and two children,) in doses varying from 2 to 15 grains, either in water or mixed with twice its weight of magnesia. It did not prove itself so powerful a medicine as has generally been considered. Its greatest action was upon the brain and intestinal canal. It first manifested itself by eructations, heaviness in the stomach, diminution or augmentation of the appetite, dryness of the œsophagus, together with pain and heaviness in the head, and vertigo; its secondary effects were rather upon the brain than the alimentary canal; they were, gaping, desire of sleep, weakness and heaviness of the body, ending in a long-continued and heavy sleep. When the dose was very strong, its action on the nervous system was well marked, such as tremblings of the limbs, and sometimes convulsions. At other times it augmented the activity of the circulation, and increased the fullness and rapidity of the pulse. M. Jærg has, therefore, been correct in ranging it amongst the general excitants whose action is principally directed to the centre of the nervous system. Writers who have treated on the subject say, that the odor of the musk may be detected in the perspiration and other evacuations of those persons to whom it has been administered, which M. Jærg denies. He says, "that the smell of this substance is caused by the frequent eructations by which their clothes are impregnated."

"From these facts it results," says our author, "that the musk can only be usefully employed in cases where the brain and nervous system are debilitated, but without congestion or compression. It is however an error to consider this medicine as so excellent an excitant; my experience proves that camphor is much more efficacious, particularly in renewing the powers of assimilation. The effects of musk are not always in accordance with the doses in which it is administered; three grains will produce a much greater impression on some persons than ten or fifteen will on others; for a person of irritable temperament 3 or 5 grains are sufficient, but those of ordinary temperament may take 6, 10, or 12 grains. The dose should not be renewed oftener than once in 8 or 12 hours."

Experiments made with St. Ignace's Bean.

Eleven members of the society took at different times, and in doses varying from 9 to 90 drops, the tincture of the bean of St. Ignace, made in the following manner:—℞. St. Ignace Bean, bruised, ℥j. Rectified Spirits, ℥viij. Four members took it in powder, in doses of from half a grain to four grains. The following results were obtained. This substance increased the secretion of the sublingual glands and of the tonsils, produced nausea, pain and heaviness in epigastrio, augmentation or diminution of the appetite, frequent eructations, colic, borborygmus, constipation or looseness, together with itching and heat in the region of the anus. As a sequence of these primitive effects, we have weight in the head, vertigo, weighty pains in the occipital, frontal, and temporal regions, inflammation of the eyes, together with increased secretions of the meibomian glands, finally, great depression, somnolency, and general apathy. These secondary effects are sometimes followed by a great acceleration of the pulse, by oppression, and a pricking, smarting feeling in the urethra.

The primitive effects of this substance then are, great irritation of the digestive canal and brain; it also stimulates the salivary, the mesenteric glands, and the pancreas.

M. Jærg says, "this medicine is very efficacious in cases of debility of the stomach, accompanied with chronic induration of the mesenteric glands. The patient should not be of an irritable habit, for in this case the action of the medicine will be directed especially to the head. We do not possess a better medicament for combating disease, where it is important quickly to modify the situation of the patient, either by changing the morbid action or preventing the return of a periodical affection. The particular action which this bean has, both upon the brain and the organs of vision, induce us to hope that it may be found very useful in cases of atony of the nervous centre, or weakness of the eyes.

"In the greater number of cases, half a grain administered every 24 hours, was quite sufficient to obtain the desired effect; sometimes it was necessary to increase the dose until its action commenced. The tincture is less active than the powder, consequently it must be administered in larger doses in order to obtain a like result."

Experiments made with Asafœtida.

These experiments were made upon two males, three females, and two children of the society. They took the asafœtida in doses varying from one to four grains, at different times and on several successive days.

The following were the conclusions:—This medicine greatly excites the digestive canal, particularly its superior portion, consisting of the œsophagus, the stomach, and the small intestines. It consequently, in proper doses, favors the functions of these organs, increases the powers of assimilation, and tends to re-establish a deranged nutrition. As an aperient it is highly improper. It also acts upon the brain by determining congestions towards it, so that its employment is often succeeded by dull heavy pains towards the crown of the head, the forehead, and the eyes. "This stimulation," says M. Jærg, "takes place through the medium of the ganglionic plexus of abdominal nerves. From its powerful action upon the intestinal canal and the nerves of the abdominal viscera, it follows that there is at times a secondary stimulating influence upon the organs of respiration and circulation. The asafœtida excites powerfully the genito-urinary apparatus."

From what we have said it will be seen that this medicine is indicated in cases of torpor or weakness of the organs of digestion, and generally where it is necessary to renew the vital powers or to stimulate the system. It may be well to inquire if its employment in all cases of hysteria and hypochondriasis, which often arise from irritations of the genital organs, or some of the abdominal viscera, is a judicious practice? M. Jærg thinks it is often very improperly administered in these cases. According to him, from half a grain to a grain is sufficient for an ordinary dose, at times it should be increased to four or five grains. As its action is often prolonged for two or three days, it should not be repeated oftener than once in the 24 hours.

Experiments made with Opium.

These experiments were made with opium in substance, in doses varying from one-twelfth of a grain to three grains, either alone or mixed with a few grains of magnesia, and with the tincture prepared as follows:—Purified opium, one part; rectified alcohol and distilled water, of each three parts; digested until the opium was completely dissolved and then filtered. The doses of this preparation varied from 1 to 36 drops. Ten members of the society took the tincture, and nine took the opium in substance.

"It was proved by these experiments," says M. Jærg, "that opium is not so uncertain a medicine as it has for many ages been considered, and that it is entitled to be ranked with those substances which primarily excite the animal economy, and secondarily produce a sinking proportionate to the intensity of the primary affection. We can even go so far as to point out the organs to which it particularly directs itself. It produces promptly the most intense congestions of the brain. Administered in proper doses it produces light-headedness and great gaiety, succeeded by a feeling of drunkenness, which again is followed by vertigo, headach, somnolency, and a deep and long-continued sleep. I have observed that opium, as well as all other powerful narcotics, particularly affects the anterior portion of the head, and that it acts upon the nose and eyes. Sometimes it materially affects the power of vision."

The stimulant action of opium is not confined to the brain, but is diffused over the whole nervous system; nevertheless its primary excitation is sometimes of so short a duration that it can scarcely be distinguished. The secondary symptoms in such cases speedily appear with great violence, and are, depression, lassitude, loss of motion, vertigo, and drowsiness. When but a small quantity of the medicine has been taken, the primary excitement is very manifest. It consists in a great increase of the sensibility, and powers of perception, together with augmentation of muscular strength: re-action, however, always comes on.

The opium also acts directly and primarily upon the digestive organs. After its ingestion we observe heaviness in the region of the stomach, movement in the superior portion of the intestinal canal, tenesmus, meteorismus, together with obstinate constipation; the intestines seem to have lost the power of contraction necessary for the expulsion of their fecal contents. Administered in small doses, it confines its action to the sensitive and digestive functions; in large doses, its influence extends to the skin, the organs of circulation, and the genito-urinary apparatus.

In what cases can opium be usefully employed? This question is difficult to answer, from the great difference which exists between its primary and its secondary effects. Nevertheless we may obtain proper results, by apportioning the medicine to the end we wish to gain. Its primary effects may be obtained by exhibiting it in small quantities, its secondary effects by exhibiting it in large doses. "For a number of years," says M. Jærg, "I have rarely used this medicine, and I am convinced it is but seldom indicated. The cases in which I think it may be employed with advantage are, spasm without inflammation of the intestinal canal, together with increase of its mucous secretion, vomiting, and diarrhœa, and where the secretions from the skin and genito-urinary apparatus are vitiated and abundant. It is desirable that opium should, for manifest reasons, be employed as little as possible." Our author thinks that a twelfth or a quarter of a grain is in the greater number of cases a sufficient dose. The tincture is less active, and may be taken in larger quantities. Small does should be taken every six hours, medium doses every twelve hours, and full doses every twenty-four hours. When we wish only to obtain the consecutive effects, the intervals should be increased.

Experiments made with Digitalis.

This medicine was administered to nearly all the members of the society, in doses varying from one-fourth of a grain to three grains of the powder, with the following results:—The primitive action of the digitalis was directed to the brain, the alimentary canal, and the genito-urinary organs, which it greatly excited; its secondary effect was to diminish the activity of the circulation. Its action on the brain was manifested by a species of drunkenness, heaviness, and pain in the head, heat of the face, with obscuration of vision. The feeling of heat and roughness which it produced in the pharynx and œsophagus, the uneasiness in the stomach and intestines, together with the alteration in the appetite and alvine secretions, left no doubt on the mind as to its *action on* the digestive canal. It was, however, on the urinary apparatus that it exerted its greatest power; every person, with one single exception, who was submitted to its operation, experienced a great increase of the urinary secretion. This augmentation diminished by degrees, but the quantity never went below the *normal state.* M. Jærg thinks, if this substance were taken in too large quantities, it would produce inflammation of the kidneys, consequently a diminution of their natural secretion. He also observes, that the organs of generation are very highly stimulated by it; it produced tickling in the glans penis, erections, and involuntary emissions. The females experienced sensations similar to those which precede the appearance of the menses, and when taken in large quantities it caused in both sexes inflammations of the internal and external organs of generation.

The consecutive effect of the digitalis is a well-marked relaxation of the circulation, the pulse becoming weak and small. This, however, does not take place till after the departure of the exciting powers; and it is, therefore, an error to consider this substance as an energetic antiphlogistic.

"After what we have said," continues our author, "it is manifest that we ought not to employ the digitalis in hooping-cough, acute hydrocephalus, or any effusion resulting from inflammation of serous membranes; but it is indicated where we wish to renew the activity of the secretory apparatus of the urine, or the organs of generation, particularly when accompanied with debility of the intestinal canal, or of the general economy. Finally, I cannot believe that this medicine is as useful in diseases of the heart as is commonly supposed, because the depressive action which it exerts upon the organs of circulation, if not hurtful, must at least be inert in many organic affections of the heart and large vessels."

The dose of the digitalis in powder is from a quarter to a whole grain. A decoction, an infusion, or a tincture, may be taken in larger quantities. The intervals between the doses should be from 12 to 48 hours, as M. Jœrg has shown that the effects of this medicine last during that length of time.

Intermittent Tetanus, by M. DANCER.

We have given this title to a disease which we have nowhere seen described. The difference between it and the tetanic intermittent fever of authors will readily be observed. Its progress by paroxysms more or less regular, and its spontaneous and favorable termination notwithstanding its tetanic character, have invested it with an importance worthy of notice. The following cases will illustrate it.

Case 1.—A domestic æt. 25, of a sanguine temperament and full habit was received into hospital, October 5th, 1824. Having menstruated at the age of 14 years, her health notwithstanding her great fatness, had been perfectly good. About four months before her admission, and a short time after her accouchement, she was attacked with numbness of the limbs, followed by great stiffness, and the most violent cramps. Her general sensibility was not affected. Latterly these attacks had come on at different times and irregular intervals, and continued for three or four hours. When she was admitted into hospital they were of still longer duration. She was in the following state: fore arms semi-flexed, hands clenched, inferior extremities as well as the feet extended. The muscular contraction was so great, that it was necessary to employ much force to change the position of the limbs, and they returned to their original situation as soon as that force was removed. The pain throughout their whole extent was excessive, the skin was hot and covered with sweat, the face animated, the respiration accelerated, the pulse hard and frequent, but the tongue was natural, and the mind perfect. In this state of things we thought proper to bleed largely, notwithstanding the patient told us that it had before been tried and had served but to aggravate the complaint. After the bleeding the stiffness and pain in the limbs were sensibly increased. The following night she became more calm, and her limbs were a little relaxed, but at 6 o'clock in the morning, the attack came on as violently as before. The forearms and fingers were flexed, the thighs, legs, and feet extended with contraction and induration of the muscles, which felt like cords and were the seat of violent palpitations. The pain was great, the skin covered with sweat, and the pulse as hard and frequent as at first. (*Bath, cataplasms sprinkled with laudanum to the limbs, antispasmodic drinks.*) The bath was prolonged for three hours and produced a marked relief, the limbs were almost entirely relaxed, and she passed a good night. At six o'clock the next morning the pain and stiffness of the limbs returned, with all the preceding violence, keeping as before the superior limbs flexed, and the inferior extended. Every instant the patient complained of her shoulders, her arms, or the calves of her legs, as being the seats of the most violent shooting pains. (*Bath prolonged till relief was obtained.*) On the morning of the 8th, a fourth attack came on, which was not relieved by the bath, and on the 9th she was in the same state, with, however, less stiffness and fever. In the evening there was a slight discharge of the menstrual fluid. Twelve leeches were applied to the thighs to supply its deficiency. There was no attack from the 10th to the 15th, when the disease returned, but in a milder form. It continued during the 16th, 17th, and 18th, accompanied by a sensation in the throat resembling hysteria. (*Bath, lavement of asafœtida.*) On the following day all the symptoms of the complaint had disappeared, and the patient left the hospital in perfect health.

This is the first case we have seen of this singular affection, and it has left upon our minds the greatest uncertainty both as to its character, and to the place it should occupy amongst other known diseases. Was it owing to simple cramp, to rheumatism, to tetanus, to hysteria, to an indiopathic affection of the muscles, or was it caused by some lesion of the spinal marrow or the nerves which emanate from its brachial and lumbar portions? It is true that we can find some of the isolated phenomena which belong to each of these affections, but the *toute ensemble* is not applicable to any one of them. In cramp there is no fever, neither is it of such long duration. In rheumatism, the seat of the disease changes, neither are its attacks such as we have described. In tetanus the disease follows a different course, and so of the other affections we have enumerated. Various as are the symptoms of hysteria, fever is always absent. To what class then shall we refer the complaint under consideration? We confess ourselves unable to answer, and can do nothing more than cite other similar cases.

Case 2d.—A worker in steel, aged 17, of robust health, had for two years been subject to sudden attacks of stiffness in his limbs, which prevented all motion. At first they were of short duration, and disappeared spontaneously, but latterly they had been prolonged, and went away slowly, leaving behind a feeling of numbness. There was no regularity in the period of their return. On the 19th March, 1826, he had an attack of the same kind, which lasted but one hour. On the 21st, he was received into the Hotel Dieu, at 6 o'clock in the morning, when he gave us the foregoing statement, to which but little credit was given. However, about 10 o'clock, the patient was attacked with a stiffness of the limbs, which increased till evening, when we found him in the following state: forearms flexed, with stiffness of the arms, the fingers drawn together and flexed, as also were the wrists; lower limbs extended and fixed in that position, a painful feeling of tension and confinement of these parts; inquietude and agitation which were manifested by a continual change in the position of the body, intense flushing of the face, profuse sweats, great thirst, with elevation, hardness, and frequency of the pulse. This state of things continued all night, during which time the patient did nothing but groan and complain. On the morning of the 22d, the face was more flushed, and the distress increased; the contracted members were affected with violent spasmodic twitchings, and even the labial muscles came under their influence, so that speech was imperfect. He insisted upon being instantly bled, which was complied with, and three cups were taken and followed by an antispasmodic draught. No relief was experienced, and in the evening all the symptoms continued in full force. The muscles were tense and hard, and vibrated convulsively upon placing the hand in their vicinity. Their phenomena were more evident on the left than on the right side of the body. The muscles which form the borders of the axilla, together with the masseters were tense and hard, the former fixed the arm against the trunk, the latter restrained the opening of the mouth, without absolutely preventing it. The other muscles of the body did not participate in the contraction, so that the patient could turn himself, sit down and rise up at pleasure; he could get out of bed, and at times during a temporary relaxation of the inferior extremities could stand up, but he could not extend either the forearms or fingers. He had no pain along the spine, his fever was high, and his skin bedewed with perspiration. (*Bath, in which the patient could only remain* *ten minutes on account of the uneasiness of the position, and the aggravation of the pain; opiate frictions to the limbs; lavement with ten drops of laudanum.*

On the night of the 23d, he was much improved, his limbs were less stiff, and he could slightly extend the forearms and fingers, his fever was less, and his appetite good. *Bath, lavement with asafœtida,* ℨj. *antispasmodic potion.*) He had a good night on the 24th, and on the morning of the 25th, got up and walked very well, and extended at will the forearms and fingers. He had no difficulty in masticating, and his pulse was natural. (*Same prescription, porridge.*) The strength and suppleness of the limbs returned by degrees, and by the 18th of the following month he was completely restored to health. This patient was received into hospital three years afterwards, when it was ascertained that he had experienced no return of his complaint.

This case only differs from the first, in the great violence of its symptoms. The similarity of the phenomena in the two cases, leaves no doubt as to their identity; and if we cannot assign to them a known character, we can at least draw the conclusion, that this malady is not one of those rare cases which are an anomaly in medicine. Since we see that it has been produced under the same form in two individuals of different ages and sexes.

Case 3*d.*—A goat-herd aged 46 years, of ordinary stature, and habitually portly, but a little reduced from the circumstance of having just passed six months in prison, had whilst there been attacked with stiffness and numbness of his limbs, which very much affected their proper office. This lasted for five days, during which time he was sometimes better and sometimes worse, but was not obliged to keep his bed. On the 17th day, (February 2d, 1826,) he was seized with a most violent stiffness, producing an involuntary flexion of the forearm and fingers, with numbness of the lower limbs. This attack continued for four or five hours, accompanied with heat, redness of the face, and profuse perspiration. To this succeeded violent pain as if the limbs had been violently contused. He was better on the 3d. He was received into the Hotel Dieu on the 4th February. The first day was passed without accident, and he was considered as one of those patients who come into hospital for the sake of nourishment and repose, rather than medical treatment. About the middle however of the following night he was awakened by pain, stiffness, and numbness in the thick parts of his limbs, which progressively increased till the following morning, when we found him lying on his back, and as immoveable as a statue; his forearms were flexed with such violence that it was difficult to extend them, the hands were clenched in such a manner that the thumb of the left hand was covered by the fingers, whilst that of the right was in contact with the index finger, as when a pen is held—the other fingers were flexed; the lower limbs were extended and fixed in that position, but less firmly than the superior ones; the muscles of the thighs and calves of the legs were hard and tense as in cases of violent cramps, as also were those of the parietes of the abdomen. The masseters were in a state of contraction, and held the jaws together with such force that they could not be seperated without great difficulty. The labial muscles were also affected, causing distortion of the mouth, and incorrectness of pronunciation. All these muscles were affected with quiverings, which the patient vainly attempted to control. The pulse was frequent and wiry, respiration irregular and anxious, intellectual faculties perfectly healthy.

Shortly after the foregoing examination, all the phenomena had acquired greater intensity, the tension of the muscles was augmented, the respiration more accelerated and more anxious, the pulse more frequent, and the patient was a prey to the severest pains. About 9 o'clock, the face which until then had not changed color, became red and animated, a profuse perspiration broke out, accompanied by some relaxation of the muscular affection, the pulse became full and undulating, and the patient ceased to complain. At 10 o'clock the sweating had so increased as to form an atmosphere of vapor around the bed, the pulse lost its frequency, and the muscular tension had diminished by degrees; the superior limb however remained flexed. At 12 o'clock the perspiration had nearly gone off, and the limbs began to recover their freedom. By evening, weakness was all he complained of. The attack had not been preceded by a chill, and the patient considered it as violent as any which had gone before. No particular treatment was resorted to. The following morning the patient seemed quite well, he had no fever, and requested something to eat, he could freely use all his limbs, and felt from them no other inconvenience than a little inquietude. The tension of the masseter and abdominal muscles had disappeared. He had no future attacks of this singular complaint.

In considering the progress of the disease we have just described, might we not say it was an attack of intermittent fever, the three stages of which were distinctly marked? The first not by a chill, but by stiffness and numbness of the muscles, which gradually increased until the approach of the second state or stage of fever. This continued until relieved by an abundant perspiration, thus constituting the third state. Might we not also say, when considering the unusual symptoms of this disease, that it belonged to that class of intermittents to which the name "tetanic" has been accorded? In what do its phenomena differ from those of true tetanus? Was there not violent trismus, permanent contraction of the abdominal muscles, together with general and involuntary stiffness of those of the extremeties, resembling that described in the previous cases? Can this in fact have been the character of the disease under consideration? If this be so, why was it that the attack did not pursue the regular course of a legitimate intermittent? Why was it not ushered in by a chill, and why did it cease spontaneously without the application of any curative means? Authors lay it down that the intermittent fevers are very dangerous if the quinine be not had recourse to. These reflections induce us to think that we have not yet discovered the true nature of this affection, of which we will give another example where the symptoms were carried to a still greater height.

Case 4. A printer, aged 52 years, of sanguine temperament and good constitution, had for six months past been attacked at different times with stiffness and numbness of his limbs. In February, 1830, these attacks re-appeared, after a violent cold which he had taken, and were very severe; one of them commenced about 7 o'clock on the morning of the 4th of March, with a pricking feeling, and a kind of general horripilation, followed by fever, with heat and rigidity of the limbs. The attack terminated about 9 o'clock by a profuse perspiration. The next morning the same phenomena re-appeared at the same hour and in the same order, but with less intensity, and continued till *mid-day*. In the evening the patient was admitted into the Hotel Dieu, at which time he seemed quite well. On the third day of his admission, at 7 o'clock in the morning, he was attacked with numbness and transient horripilations, followed by stiffness of the limbs, which increased until the lower extremities, which were extended, became nearly immovable, and the superior ones were completely fixed in a flexed state. The fingers were perfectly rigid. The vertebral muscles were implicated by degrees in this rigidity, so that the body was bent from before backward; the cervical portion of the spinal column was at liberty. The skin was very hot, pulse excessively q[illegible]ck, with great acceleration of the respiration, intense color in the face, violent thirst, speech much embarrassed, by a difficulty in moving the tongue, the muscles of which appeared affected the same as those of the limbs. He could open his mouth at pleasure. These phenomena had come to their height about half past 8 o'clock, at which time the patient became bathed in sweat. The frequency of the pulse diminished, together with the intense color of the face. At 10 o'clock the superior limbs were relaxed, and the fingers opened. By 11 o'clock the trunk and inferior limbs were placed at liberty, and the calmness of the pulse announced the approaching termination of this attack, which had been more violent than any that had preceded it. By 5 o'clock he was perfectly calm, and had not the slightest stiffness remaining. A bath was administered to him. There was no unusual deposite from his urine.

We looked for another attack on the fourth day, but the patient felt nothing but a soreness in the limbs, without rigidity or fever. Nothing further supervened, and he left the hospital at the end of three weeks perfectly restored to health. No particular treatment had been adopted in his case.

The intermittent character of this disease, and its periodical returns, are more clearly seen in this than in any of the cases which have preceded it. Each one of these returns was characterized by tetanic symptoms, which in the last one affected not only the muscles of the limbs, but also those of the tongue and posterior part of the trunk, thus giving rise to difficulty of speech, and a true opisthotonos. All these phenomena disappeared with the cessation of the attack, which took place at the end of a few hours, upon the appearance of a profuse perspiration. This disease, we think, belongs to the class of intermittent fevers, but not to those to which the name "*pernicieuse*" has been given. In these latter the third attack is generally fatal, whereas we have here seen it pass over, leaving the patient in perfect health. We will now give a short review of the foregoing cases, with the points of resemblance and difference which exist between them.

All the patients of whom we have spoken, had for several months previously to their admission into hospital, felt some slight indications of the attacks which awaited them. These were at first trifling and of short duration, without putting on any definite shape. They were characterized by momentary stiffness of the limbs, which spontaneously ceased, leaving behind a numbness of the parts. By degrees the intensity of the attacks were redoubled, and they began to assume a regular type,—quotodian in one case, (*Case* 4,) tertian in a second, (*Case* 3,) and simple remittent in the others, (*Cases* 1 & 2,) accompanied by other febrile symptoms analogous to those of intermittent fever, with the exception of the cold stage, which was but slightly marked.

In the commencement of the attacks the patients complained of stiffness and numbness of the limbs, the muscles of which soon became so intolerably tense and rigid, that they were unable to execute any movement. The forearms and fingers were violently flexed, whilst the inferior limbs were in a state of extension, which they preserved during the entire paroxysm. To these phenomena, which were common to all the cases we have related, there were others added, which very much resembled tetanus. In Case 2, by the contraction of the masseters, the jaws were fixed as in trismus; in Case 3, the abdominal muscles were affected in the same manner; in Case 4, the vertebral muscles were in a state of rigidity, giving rise to a true opisthotonos; besides which, in the heighth of the attack the contracted muscles were affected with tremblings and acute pains, as is the case in tetanus; the face was highly flushed, the pulse and respiration much accelerated, and the patients were very anxious and complained dreadfully. All these phenomena pursued their course till they arrived at their greatest height, when they were relieved entirely by a profuse sweat, as in Cases 3 and 4, or merely underwent a simple remission, as in Cases 1 and 2, to which speedily succeeded a new paroxysm. In the last event the paroxysm seemed to last for several days; in the first, on the contrary, it ceased at the end of eight or ten hours; and the most remarkable feature was, that in all these cases the disease which assumed so dangerous an appearance, should go off at the end of two, three, or four attacks, without the aid of medical treatment. In two cases, (1 and 2,) blood-letting was ineffectually tried; in Case 1, general bathing appeared to be of some service.

What then is the disease, the phenomena of which we have just reviewed? We have stated that it resembled cramp, rheumatism, tetanus, and intermittent fever, but did not present the collective symptoms of any one of these diseases. We are of opinion, that in its symptoms it has the greatest resemblance to tetanus, and in its progress it approaches nearest to intermittent or remittent fevers. It may then be called an *intermittent tetanic fever*, which from its symptoms might be ranked with the *fièvres pernicieuses*, were it not that its harmless termination forbids this classification.

The facts which we have stated are we think worthy of being known, if it be only to attract attention to this singular and nameless affection. *Archives Générales, Juin*, 1831.

On the Causes and Treatment of Deafness. By W. Wright, Esq., Surgeon-Aurist, London.[*]

By a very simple instrument, which I have repeatedly described in my works, and the pattern of which I have given to surgeons' instrument-makers, I am able to see the membrana tympani in nearly all cases, without occasioning the slightest pain to the patient.

Singing, humming, and other noises in the ears, frequently exist to so great a degree, that they cause a species of confusion in the sense of hearing. Some of the theories whereby different persons have endeavored to account for these sensations, possess much ingenious reasoning. I have known distressing imaginary sounds to have been occasioned by the use of mercurials, by sitting in a current of air whilst in a state of perspiration, from want of tone in the digestive organs, and, frequently, from the state of the auditory passage. Many of these cases can be relieved very speedily, if proper treatment be immediately resorted to. They sometimes are precursors of paralysis and apoplexy. Having formerly said much on this subject, it appears superfluous to enlarge on it.

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[*] In reply to Dr. Fosbroke's papers, No. 6 and 7, in The Lancet, March 19 and April 9, 1831.

The account of ancient remedies, which the fancies or follies of mankind have invested with the power of curing deafness, might be extended until it would make a considerable volume. They merit no reply, but that, with the exception of one person who practises as an aurist, it is an unjustifiable and illiberal aspersion to attribute to that class of professional men generally, the use of any of the *senseless* prescriptions which Dr. Fosbroke mentions amongst his ancient remedies. It proves one fact, however; that Dr. Fosbroke is ignorant of what aurists either use or recommend; and although he sat out by giving his readers reason to believe that he would state nothing but what was the result of his *actual observation*, yet, in several instances, I have shown he has depended upon hearsay evidence.

Dr. Fosbroke *professes* to give the case of Mrs. R., of Lymington, Hants. That lady became a patient of mine in October, 1829. Her deafness was preceded by violent fits of sneezing. It has been ascertained that she sneezed on some occasions 200 times in succession. Observing the incorrectness in the statement of this case, as furnished by Dr. Fosbroke, I wrote to my patient on the subject, and the lady's reply is now before me. She says that she never saw or heard of Dr. Fosbroke, but that he might have learned the particulars of her case from Mrs. Moody at Bath, who attended with the vapor-bath; but Mrs. R. considered it necessary to consult a *professional* man as to the said bath. Itard told her that he thought the deafness proceeded from violent inflammation caused by severe colds. His treatment was, leeches, linseed poultices, and syringing, with decoction of soapwort; but these completely failed of success, and she now writes, "As to my deafness having *returned* in 1826, it never had *left* me." None of her family any more than herself, ever had any "manifestation of a strumous habit." Since I have occasionally attended Mrs. R., she has much improved in general health, and also in regard to the sense of hearing. Mrs. Moody may be, and no doubt is, a very clever woman in her department, but it is not such authority as the professional world would expect Dr. Fosbroke to produce after his pompous commencement. The fair inference is, that he must be at a loss for cases. Neither is it any proof of good feeling in him, to endeavor to affix the kind of stigma which is unjustly attached by the popular world to that disease, on a lady perfectly free from any such symptoms, and of whom he could form no opinion from actual observation, or even from the report of those who were competent to form a judgment of the case.

Persons who are afflicted with a disease difficult of cure, are induced to seek relief from any source; and as it is generally the case that when the body is diseased the mind becomes distressed by the complaint, and a state of nervous irritability frequently supervenes, patients ought, therefore, to be objects of compassion to every humane mind. But Dr. Fosbroke appears so much attached to the use of vituperative remarks, that he quite forgets common courtesy. He says they are "poor noodle-headed patients;" and, afterwards, that there are few patients who have the faculties of rational beings. Cheltenham is, I believe, called a watering-place, and Dr. Fosbroke is resident there;—*ergo*, Dr. Fosbroke is a "watering place doctor." Dr. Fosbroke attributes "purse-milking" motives to some of these personages. Probably the private history of the medical world in Cheltenham, if it were worth the inquiry, might elucidate the ambiguity. The learned Doctor appears to be angry with his compeers, as well as their patients. It is to be presumed that *he* does not bestow the same appellation on those who consult him, whatever persons of plain common sense may *think* on the subject.

I shall presently endeavor to investigate the propriety of the remedies proposed by Dr. Fosbroke, and make a few remarks on the permanence of cures.

Reverting to that part of Dr. Fosbroke's paper, No. 6, in which he gives some of the ancient methods of treating deafness, and remarks how interesting it is to trace the progress of therapeutics, I think Dr. Fosbroke ought to feel obliged to me for enabling him to indulge in his pursuit more completely, by showing him where Salmon and others, obtained the information they gave; viz., *Mr. Doctour Oswaldus Gabelhouer*, *Matthiolus*, *Dioscorides*, *Zackius*, *Arculanus*, *Trallianus*, *Riverius*, *Rhazes*, *Pliny the younger*, and many others, most of whom named or recommended the preparations mentioned by Dr. Fosbroke, together with other very *curious* remedies, equally entitled to the *serious* consideration of a man of science at the present day. It is tolerably certain that the ancients were not acquainted with the chemical properties of the heterogeneous mixtures which they recommended. The distinctions they made, which I am about to notice, and the barbarous remedies they prescribed, may therefore be more reasonably attributed to caprice, or a desire of acquiring fame by the extraordinary nature of their prescriptions, than to any sound knowledge of the subject. Some of these ancients advise the urine of a young whelp which cannot go, to be used; others ridiculously contend that it ought to be that of a bull; another prefers that of a wild boar; a fourth says a wolf's is better; a fifth thinks the same liquid from a *male* child is the *ne plus ultra* of perfection; whilst a sixth shows the folly of all former writers, and asserts that nothing is so certain as a *female* child's urine; but that to make the charm complete, it must be applied for the mystical number of nine nights! The gall of every known animal, bird, and fish, animal fats of all descriptions, putrified insects, &c. &c., have all undergone the same discussion. Dr. Fosbroke says "bull's gall is the strongest." If it be in chemical properties as a solvent of cerumen, the gall of the hog is found on chemical analysis to contain a larger portion of soapy, resinous quality, than that of any other animal. In the more early ages, when little was known as to the treatment of deafness, beyond dissolving indurated cerumen in the auditory passage, this was a favorite remedy; and if we attend to the *nature* of most of the articles recommended, their operation could only be effectual in such cases. Many of these have been retained as remedial agents, and prescribed by persons ignorant of more judicious modes of treatment: even some of the compilations denominated medical dictionaries, the Physician's and Surgeon's Vade Mecum, &c. &c. published by a book-making physician, contain the formula of ox-gall with Peruvian balsam! These books are professedly written for the instruction of youth; and thus the fountain of knowledge is rendered turbid at the source, and the errors of the teacher flow through a thousand channels, to the injury of both patients and practitioners. There exists no necessity for resorting to any thing so *filthy* or *variable* in point of quality as this animal product; solution of soap in distilled water, put into the auditory passage rather more than blood-warm, and stopped in with plugs of oiled cotton wool, will very speedily detach the cerumen from the sides of the passage, and the judicious use of a proper syringe will remove the obstruction and restore the hearing. Caution is necessary afterwards to prevent the effect of cold; this is easily adopted by merely seeing the patient once or twice, and applying a little liniment, varied according to the nature of the case. I have seen cases which had been in the hands of some self-sufficient general practitioner, who, knowing nothing of the proper treatment, extracted the cerumen, and congratulated his patient and himself on his skill, though in a short time the deafness came on with more distressing symptoms, and became very difficult to remove. In the early part of my practice I have frequently had cases which presented all the appearances of indurated cerumen, and in which I anticipated the pleasure of immediately effecting a cure, but, to my extreme vexation, I have found the apparent mechanical obstruction to be inspissated pus, beneath which there existed a considerable ulcerated surface, over which the substance that apparently filled the passage formed a species of eschar, and the fresh pus as it formed discharged itself through a fistulous perforation of the membrana tympani, into the throat. The soap lotion applied in these cases caused much pain, and I have therefore for several years used successfully a lotion of liquor plumb. subacet., formed with distilled water, whenever I have had the least reason to believe such to be the state of the auditory passage. The lady mentioned by Dr. Fosbroke, in Salmon's case, No. 2, p. 827, who "left Cheltenham to go to the Pyrennees to get well of deafness," would certainly never have taken such a journey unless under a strong persuasion of deriving benefit, and persons in this country are not inhibited from adopting such means as they may deem proper, to remove any malady under which they labor. It therefore appears extraordinary that Dr. Fosbroke should give vent to his ire by calling the poor lady "a she ass!" unless it were vexation that the lady would not consult him. In what school, college, or society of men, the Doctor learned the coarse and quaint language which he has made use of in his papers, probably may never be known, nor is it of any consequence whether it be or not; it is, however, to be hoped, indeed I am certain, that such expressions are not fair samples of the politeness of Cheltenham physicians.

Dr. Fosbroke says, "the same agents, with little difference, are applicable to deafness *with* and *without* discharge;" this observation may pass as sound reasoning with those who have become perfectly acquainted with diseases of the ear after a *month's tuition* according to the Doctor's plan, but I am satisfied no *competent* practitioner would make any such absurd assertion. I had recently as a patient, afflicted with purulent discharge, the daughter of a physician of great practice in a provincial town. She could not bear the most gentle use of the syringe to convey a lotion formed of liquor plumb. subacet. and aqua distil., which I have generally employed with advantage. I advised medicine, and in about a week the syringe could be used with any necessary degree of force. Progressive treatment, up to slight stimulatives, was adopted, and she returned to her father completely restored. Had the same treatment been adopted in her case, as would have been proper if there had been no discharge, the consequences would probably have been serious, if not even fatal. I could give numerous instances of the same kind. It is impossible to lay down general rules for the treatment of cases which vary so much in their symptoms as those where a purulent discharge has become established. In some, the lotio plumb. subacet. proves successful, in others the lotio plumb. subacet. dilut., or the lotion of purified sulphate of zinc, or of dried alum; but to the auditory passage without discharge, by which I understand an ear devoid of any secretion from the ceruminous glands, I presume no practitioner in his senses would use these agents.

As to the permanence of cures, there are many persons who periodically require professional attention; of these, cases of indurated cerumen are very common, and deafness occurs in a greater or lesser degree at intervals; but it is very readily relieved, and might be entirely avoided, if the patients would trouble themselves to attend to the directions I always give. Some few do so, whilst the generality reply, that it is very little trouble to have their ears cleansed once a year. When the symptoms are, noises in the head, and a total absence of cerumen, it becomes necessary for the patient to apply the remedies which have produced a cure, for a considerable time, particularly if advanced in life. Too many, on being released from the inconvenience they have been subject to, neglect the advice they have received, and on the first attack of catarrh the deafness returns; whereas had they adopted the precautionary system recommended, no such occurrence could have taken place. When it does, under these circumstances, the fault is with the patient, not with the practitioner. I have thus shown the grounds upon which it may be said cures are not permanent; and I am satisfied that few, if any, patients are permanently cured, if violent methods be adopted. My modes are mild; I endeavor to assist and strengthen the system generally where debility exists, and not in cases called "nervous," by those who know not what else to say, resort to bleeding, blistering, salivation, &c. My topical treatment is also on the same plan, and I have the satisfaction of having repeated recommendations of fresh patients, from old ones, whose cures have "stood firm" six, eight, ten, and twelve years.

I shall now commence my observations on Dr. Fosbroke's 7th paper, by remarking, if there be reason to think that the mucous membrane lining the mastoid cells is in a state of disease, it is judicious, and beneficial in the deafness which occurs, to direct applications upon the mastoid process, regulating them so as to produce the effects which the experienced practitioner may deem desirable. For this purpose very opposite agents are often requisite, but blisters, preparations of antimony, &c., are recommended too often as a routine practice, or for the purpose of *amusing* the patient, without there being the slightest indication, from any development of the symptoms, that they are proper. The number of miserable victims, whom I have seen, to the improper use of mercury, both externally and internally, in diseases of the ears, some for ever deprived of all sense of hearing through its agency, impels me to advise every practitioner, who values the health or sense of hearing of his patient, not to follow Dr. Fosbroke's plan of applying it on the mastoid process, or in any manner to the auditory organs. I have neglected nothing which reason, or the opinion of men of education and scientific attainments, has from time to time discovered, using nevertheless my own judgment and proper caution. I therefore had given iodine a very fair trial, and when Dr. Manson published his work I resumed those experiments; but after much experience, in every possible way, of this substance, obtained from the best sources, I corresponded with Dr. Manson on the subject, and feel myself obliged to come to this conclusion, that, unless the deafness be accompanied with tonsillar enlargement, none of the preparations of iodine are at all beneficial.

In the year 1822 I published and circulated amongst the medical profession, some observations on the improper use of mercury in cases of nervous deafness, and received numerous letters from most respectable practitioners, confirming the opinion I had published of its injurious tendency. Since that period I have found no reason to alter my practice, but still continue to denounce the abuse of this mineral poison. Mr. Earle, who is quoted by Dr. Fosbroke, is no doubt a very good general surgeon, although no one ever accused him, I believe, of being AN AURIST, but Mr. Earle has sent cases to me in which his treatment failed, and of course I cannot look upon him as any authority in cases of diseases of the ears. In the *London Medical and Physical Journal* for September, 1827, I gave the case of a gentleman who had paralysis of the tongue, with distressing noises in the head, from the ointment of the nitrate of mercury. Another patient who had had incipient affection of the same nature, sufficient to occasion a dislike of entering into conversation, through the *same* application. I have seen many cases where these mercurial unguents have been introduced into the auditory passage, or the mineral exhibited internally, and never yet met with an instance of beneficial result, but many of a contrary tendency, in which deafness and noises in the head were established beyond all hope of relief. As Dr. F. has, by way of argument, endeavored to make the affections of the eye and ear analogous, I may be allowed to observe, that if mercury were less freely used in diseases of the eye, we should not have so many cases of incurable blindness.

Ammonia, in all its varied forms, has long been a favorite remedy, though unjustly so as to any benefit it has ever produced. It has one advantage, as regards the practitioner, for it gives sufficient pain to the patient to let him know that *something* is doing by his professional advisers. My ideas are, that whatever occasions pain to so delicate an organ as the ear, is certain to cause corresponding injury. I never make use of any preparations of ammonia to the auditory passage. As to tobacco-smoke, it is an "auld wive's" remedy, often uselessly tried by those who know no better. It merits no further remark.

Observations on a peculiar Displacement of the Scapula, by M. Loses, *M. D.*

Philip, aged 30 years, of weakly constitution, whilst driving a heavily loaded carriage, fell on the fore part of his body, his arms at the same time being crossed on his breast. Whilst in this position one of the wheels passed over the posterior part of his thorax, and the right scapula being strongly compressed, was forced from its natural position. I found him in the following condition:—the head and trunk were inclined to the injured side, the face to the left; the injured shoulder was depressed and inclined forwards; the scapula was moved some distance from the spine, and its integuments were considerably elevated: from these appearances it was not difficult to recognise a displacement of the scapula, between which and the thoracic parietes there existed an engorgement occupying the whole of the scapular fossa.

A similar tumefaction existed between the infra spinous fossa and its integuments, the tissues of which were unchanged. By this displacement of the scapula the clavicle was rendered perfectly transverse, and its sternal extremity distended painfully the ligaments by which it was embraced, though the articular surfaces remained in apposition. The arm of the injured side descended lower than the other, and its pronation was so considerable that when it was moved from the side, the olecranon process presented anteriorly. This condition of the parts rendered motion nearly impossible. The contusion of the parts about the shoulder, the sub-scapulary engorgement, and perhaps the laceration of a portion of the trapezius and rhomboideus, together with the violent distension the parts had sustained, were sufficient to prevent motion.

In this case it appeared necessary to fulfil two indications.

1st. To remove the considerable engorgement caused by the violence of the contusion, and thereby prevent inflammation and the formation of purulent depots.

2d. To restore and maintain the shoulder in its natural position.

I fulfilled the first by blood-letting, diet, and topical resolvent applications.

For the second I employed a bandage, similar to that which

Desault employed for fractured clavicle, (omitting the cushion,) with which I kept the arm applied to the side in such manner as to direct the shoulder upwards and backwards. The fore-arm was flexed, applied across the chest, and kept in position by a sling. The bandage was tightened in proportion to the subsidence of the inflammation. Considering the violence the parts had sustained, I doubted whether the shoulder would recover its natural position, and the arm its motion; but each dressing dissipated my fears, and at the expiration of twenty days from the accident, I had the satisfaction to see my patient perfectly cured.

[*Archives Génerales, Mai,* 1831.]

On the pathognomic signs of Pneumonia. By M. Loewenhard à Breslau.

There is no malady which has been a greater opprobrium to the profession than pneumonia, and M. Loewenhard asserts, that we are yet far from having an exact knowledge of this disease. Until this time, says he, no one has given to the profession a true table of the symptoms of pure pneumonia. In every account which has been given, the symptoms of pulmonary catarrh, or of pleuritis, and we might add those of incipient phthisis have been mixed up with those of pneumonia. When this latter affection is free from complication, it is not accompanied by cough or pain, its true characteristic symptom is dyspnœa which progressively increases, and which proves that the engorgement of the lungs renders those organs more and more impermeable to air. It appears therefore that pure pneumonia is a very insidious disease from the great difficulty of its recognition. The author cites several cases of pneumonia of this kind.

[*Journal der practischen Heilkunde,* 1830.]

Observations on an Abscess in the Right Lung, followed by some reflections on this affection; communicated to the Royal Academy of Medicine, by M. MARTIN SOLON, *adjunct member.*

A female, named Bernard, aged 45 years, entered the hospital Beaujon, the 13th of April, 1831. She was remarkably emaciated, but the color of the skin did not lead us to suspect the existence of any organic disease.

Her emaciation did not alarm her; she complained of having for some time experienced pains in the stomach, accompanied with want of appetite and difficult digestion; she was troubled with nausea occasionally, but never vomited. We perceived, on examining the patient, that she had suffered amputation of the right breast, and the middle finger of the right hand. The cicatrices were perfectly smooth and not painful. She informed us that her breast had been removed twelve or fifteen years since, in consequence of a cancerous tumor there developed; since which time she had experienced no inconvenience from it. Her finger had been removed recently, in consequence of a wound.

We thought that the emaciation might be caused by some cancerous tumour, but on an examination of the chest no appearances were found which could convince us of the fact. Pressure on the epigastrium produced pain, but there was no tumor.

Twenty leeches to the epigastrium, fomentations to the belly, gum water, emollient lavements.

April 15. The pain in the epigastrium continued. Twelve leeches were applied to the pit of the stomach.

The next day the patient was relieved; the pain and heat at the epigastrium were entirely dissipated. At her request we allowed her to have a few spoonsful of milk porridge; we continued the mucilaginous drinks and opiated cataplasms over the epigastrium. She continued to improve until the 22d of April, when she was seized with cough and pain in the right side, accompanied with sanguinolent expectoration. The blood was so pure that we would have considered it an hæmoptysis, if the presence of fever and the rale crepitant had not indicated an inflammation of the pulmonary parenchyma.

The trifling extent of the inflammation, and the emaciation of the patient, determined me to restrict my depletory measures to 15 leeches over the painful part. Diet, mucilaginous drinks.

On the following day the pain in the side was diminished; there was brownish expectoration, oppression, and considerable fever. She was bled from the arm.

April 24. Third day of the pleuro-pneumonia. Respiration less difficult; the expectoration continued brownish.

4th Day. The pain in the side was more acute and the fever greater.

Bled from the arm to the extent of two *paletts*; 18 leeches, and an emollient cataplasm to the side.

5th Day. Sensible melioration—expectoration brownish.

6th Day. Return of the oppression—continuance of the fever. The debility and emaciation of the patient prevented us from general blood-letting, but we prescribed the application of 15 leeches over the non-resonant part of the chest.

7th and 8th Days. Respiration more easy—the expectoration less brown—fever diminishing.

9th and 10th Days. Progressive melioration of the thoracic symptoms; expectoration yellowish. At the request of the patient milk was allowed. Mucilaginous drinks continued.

11th Day, May 2. The expectoration was mucous and slightly colored. This melioration, together with the gradual diminution of the cough, and the great facility of respiration, made us expect the resolution of the disease, particularly as the right side of the thorax presented scarcely a non-resonant point.

Bouillion, milk, pectoral drink.

12th Day. Expectoration perfectly easy, slightly spumous, thready, colorless, and adherent to the vessel in which it was received.

13th Day. Patient easy—requested vermicelli, which was allowed.

14th Day. Not so well as on the preceding day. She complained of a sense of oppression, which she referred to the epigastrium, and of great debility, the cause of which she was ignorant. The thoracic disease not being sufficient to account for these symptoms, we believed them to be caused by the vermicelli having excited some irritation of the stomach. Accordingly, we forbid aliments, and allowed her to have milk alone.

15th Day, May 6. The sensation of debility increased; face pale, pulse small, compressible, and frequent; acute pain in the right side; mucous expectoration. Polygala—bouillion—blister to the right side.

The debility augmented progressively until death, which occurred a few hours after the visit.

On examining the body, 24 hours after death, we found between the 5th and 6th ribs of the right side, near their cartilages, an adhesion of the pleura-costalis and pulmonalis, *nearly circular*, and of about an inch and a half in diameter. In tearing it to remove the lung, about a spoonful of white, inodorous matter, escaped. Astonished to find phlegmonous pus between the adhesions of a serous membrane, we examined the lung, and found that these adhesions covered the middle lobe to the extent of a five franc piece, and that the corresponding costal and pulmonary surfaces were covered with a false membrane. In the centre of the pulmonary surface there was a perforation, which communicated between a pulmonary excavation and this accidental pleuritic cyst. The excavation in the lung could have contained two or three ounces of fluid; it still contained several spoonsful of the same matter already described, with the exception of its being a little redder. The surface of some parts of this cavity was as smooth as a mucous membrane, but in nine-tenths of its extent it was lined with a kind of reddish detritus, soft and infiltrated with pus. Of this excavation two parts, from 5 to 6 lines in extent were formed by the pleura, and appeared to be converted into eschars, ready to separate from the rest of the membrane, and afford an exit for the matter contained. One of these points was opposite the fourth rib, being above the pleuritic perforation, the other was contiguous to the pericardium; the pulmonary parenchyema between them was entirely destroyed. The rest of the right lung appeared healthy; in its upper part we found a calculus of the size of a grain of hemp-seed, and of a siliceous consistence. The left lung was healthy throughout its extent.

In raising the liver we found between it and the stomach a clot of black blood, putrid and of an insupportable odor. It came from the stomach, the lesser curvature of which was destroyed by an enormous cancer. On incising the greater curvature of the stomach, we found its cavity filled by a clot of black blood weighing 5 or 6 ounces, which was exactly moulded by the organ which contained it; it exhaled an odor analagous to that heretofore described. On removing this clot we perceived a cancerous ulcer, which had destroyed the lesser curvature and the superior and inferior surfaces of the stomach; its circumference was formed by adhesions to the surrounding viscera, and through its inferior part a portion of the liver, pancreas, and spleen, which had participated in the disease, were visible. The whole surface of the ulcer was softened and infiltrated with blood. The organs mentioned were reduced to a lardaceous consistence, and the vessels which supplied them were so altered by the disease, that it was impossible to perceive whether the blood came from the stomach or spleen.

The duodenum and three or four feet of the jejunum were filled with a clot, which was moulded to the internal surface of these intestines.

The quantity of blood contained in the digestive tube was about two pounds. The other organs were bloodless, and presented no appearances of cancerous alteration. That a cancer of such magnitude, and implicating so many organs, should exist without any signs of its presence, is at first sight a subject of surprise.

But when we reflect on the depth at which it was seated, the difficulty of manual exploration, and the scirrhous and contracted state of the lower part of the œsophagus, presenting an obstacle to vomiting, even had the patient been so disposed, also the normal state of the pyloric extremity of the stomach, we may understand the reason why there was neither nausea nor vomiting.

The ancients who confounded diseases of the chest one with another, believed that abscesses in the lungs were of frequent occurrence, and gave them the name of vomic, because the pus was expelled particularly during the act of vomiting.

But the pathological investigations of modern times have taught physicians, that these abscesses are not of frequent occurrence; in fact, so rarely are they seen, that some physicians deny their existence. We shall not here enter into a history of pulmonary abscess. M. Laennec, whose sagacity and exactness cannot be too much admired, says, in his excellent treatise on auscultation, that of many hundred examinations of those who died of peripneumonia, in but five or six he found purulent collections in the lungs. Professor Lallemand, of Montpelier, has published in the 65th volume of the Bibliotheque Medicale Journal, observations of pulmonary abscess. During the year 1823, M. Honoré presented a remarkable case to the Academy.

"I observed, in the year 1818, at the Hotel Dieu, in the ward of M. Geoffroy, a pulmonary abscess, which terminated by vomiting on the twentieth day, from an attack of pneumonia, the issue of which was perfectly favorable." The case just related, although less happy in its termination, proves incontestibly the possibility of abscess in the pulmonary parenchema. This could not have been a tubercle.

It is true that the right breast of the patient had been removed some years before for a cancer, and the abscess occupied the right lung. Is it not also true that the right lung is more frequently inflamed than the left? Besides, the day she entered the hospital we satisfied ourselves that the chest was perfectly sonorous. The presence of an enormous cancer in another part of the body might lead us to suppose the disease in the chest to be of the same nature, but the nature of the pus and the appearance of the abscess, did not allow us to suspect that any difference existed between this and ordinary abscesses in the cellular tissue. The diseases had no relation to one another, they were coincident merely. On examining the portion of lung which contained the abscess, four days after the autopsy, some persons asserted, because it was fœtid, that the disease was gangrene of the lung. But is it to be wondered at if a portion of lung infiltrated with pus should putrify four days after death? At the time of dissection we have no hesitation in asserting that no evidences existed either in the pus or parieties which contained it. Can we suspect from the nature of the expectoration the existence of abscess? In the present case the expectoration was in the commencement more bloody than usual, it then became brown, and finally, like in a simple bronchitis, it consisted solely of mucus. We know that the presence of blood alters the appearance of the expectoration in pneumonia. In a table which I published in the 43d volume of the Dict. des Sciences Med. at the end of the article pneumonia, by M. M. Pinel and Bricheteau, I have, in 41 cases, noted twice the existence of the brownish expectoration, without there having been abscess in the lungs. I remember that one of these patients, notwithstanding the advanced stage of his disease, and the debility of his habit, was bled largely, and his recovery was as prompt as could have been wished for. The expectoration can be a diagnóstic of the existence of abscess only, when the matter is discharged into some of the ramifications of the bronchia.

We cannot expect to find abscess when a considerable portion of the lung has been inflamed; death will occur before the matter has been collected into a focus; the lung in these cases is found infiltrated with pus. Sometimes the centre of these infiltrations are in a state of ramollisment, which has been described by Professor Andral, under the name of the *ramollisment gris*, which would have been converted into a purulent depot, if the patient had lived a little longer.

This does not occur in partial or lobulary pneumonia, for in these cases a sufficient quantity of the lung is in a condition for maintaining life. The cases of pulmonary abscess cited by Laennec and Professor Lallemand, and the one just related, were the result of partial pneumonia; they were termed by Van Suieten the occult or open vomicæ. By the circumsented state of the disease we can conceive of the cure of pneúmonia terminating by suppuration and gangrene, and this augments our interest in the study of partial pneumonia. When these purulent depots are in the vicinity of the bronchial ramifications, these become the avenues through which the matter is expelled. This is not always their termination, for we have seen in the case described, that a perforation was about to be made into the pericardial region, or into the anterior mediastinum. The establishment of which opening would without doubt have produced dangerous consequences. A portion of the pleura, which formed the other wall of the abscess, was on the point of being detached, which would have allowed the matter to escape into the cavity of the chest, and constituted an empyema; but it is probable that before it separated it would have contracted adhesions with the pleura costalis, by which the effusion would have been prevented.

This occurred to the lower eschar of the pleura, the separation of which made the communication which existed between the pulmonary abscess, and the accidental cyst formed by the adhesions of the pleura.

It is probable that this perforation was made during the violent and rapid increase of the pain which occurred the evening before death. The arrival of the pus at the pleura caused inflammation and the adhesion, which prevented the matter from being effused in the chest. The matter without doubt would have traversed the thoracic parieties, and the patient would have had a chance of recovery, if the hæmorrhage caused by the cancer had not rendered death as inevitable as it was unforeseen.

[*Archives Générale, Mai*, 1831.]

Observations on the Employment of Opium and its Preparations, in Diseases of the Abdominal Viscera, by M. CHAUFFARD, *Physician to the Hospital of Avignon.*

Observation 1st. The cook of M. St. Marc, aged 31 years, a brunette, fleshy, and of a sanguine temperament, had for some time experienced pains in the stomach and want of sleep, for which she had purged herself and taken an infusion of sage and balm. Her anxiety increased, she felt continual distress in the epigastrium, accompanied with hiccough and eructations, tossing of the limbs, flushed face, and some fever. Ordered to bed, and to have barley water and emollient fomentations.

She was restless throughout the night, and next morning vomited with great pain a quantity of glairy and bilious matter. (Bled to 18 ounces, 30 leeches to the umbilical region, water with syrup of gum, and three mucilaginous demi-lavements.)

Throughout the afternoon the vomiting and hickup continued, the patient was restless, and bore with difficulty the fomentations; thirst moderate, no fever, tongue mucous, yellow, and moist. (Bled from the foot, 30 leeches were applied the next day, which were followed by another application, making in all 100 leeches to the anus and abdomen.) The patient had some sleep, and did not complain of debility. Her countenance was sunk, and her complexion was of a straw color. The vomiting ceased, and the hickup was less annoying; the lavements produced no eructations—the menses appeared.

On the 7th day vomiting returned, without any appreciable cause, hickup more intense, and the menstrual flux ceased. (Warm bath for two hours.) As the abdomen was not tumid, and the bowels not having been moved, the tongue being covered with a yellow mucus, and the inflammatory symptoms having been actively combated, the pulse not being very febrile, I prescribed three ounces of the oil of sweet almonds, half an ounce of castor oil, and fifteen drops of laudanum, to be taken by spoonsful. The patient slept during the night, and her condition was improved.

She took a draught containing one ounce and a half of castor oil, which was repeated at night; it contained some morphine, and excited no irritation. The patient slept well, but had no evacuation, although I had prescribed a clyster of soap and castor oil in a decoction of senna. The pain and other symptoms of the disease subsided, which I attributed to the opium. On the 14th day the bowels opened of their own accord, and on the 16th the patient was convalescent. Opium was given to allay the irritation, in accomplishing which, it appears to me to be as successful as sanguineous depletion and other antiphlogistic means.

Obs. 2d. Mery, a farmer, aged 30 years, meagre, lived freely and drank much wine, was affected with pain and swelling of the belly, his skin was hot, his tongue dry, pulse small and frequent, vomited a greenish matter every two or three hours—countenance anxious. He was bled twice in the space of twelve hours, and 25 leeches were applied to the epigastrium, followed by fomentations and refreshing drinks. The pulse became small and almost thready. (Blisters, lavements, syrup of poppies, and morphine.) The patient was relieved, but debilitated. (Leeches to the right hypochondrium.) Bled freely—the night was passed well—vomited but twice; a dose of the syrup of morphine procured a sound sleep. On the following morning 12 leeches were applied between the umbilicus and hypogastrium; at night 8 were applied to the coecal region—fomentations with the decoction of mallow roots—the leech bites bled freely. The patient continued to take small doses of the syrup of morphine for some days, during which the pulse became regular, and the countenance animated; the bowels opened and the patient convalesced.

Obs. 3d. A young female, a silk worker, apparently debilitated, in her second pregnancy, had been troubled with difficult digestion, febrile flushes, diarrhœa, and other symptoms of abdominal irritation, took cold, and was seized with a vomiting of greenish matter, accompanied with great frequency of the pulse. (Bled three times to the extent of 7 ounces each time.) The pulse became almost vermicular, skin warm, belly swelled and painful; leeches were applied to the epigastrium, which swelled every three hours, and after vomiting returned to its natural size, again to become tumid; debility increasing, (lavement of gum, one pint, containing laudanum, xx drops; julep, containing one gr. opium, to be taken by spoonsful.) This treatment allayed the vomiting, and strengthened the pulse. Two more capillary bleedings cured the patient.

Her delicate habit, the violence and obstinacy of the inflammatory symptoms, and the debility which followed the bleeding, made me have recourse to leeches and opiates, the utility of which practice was obvious.

Obs. 4th. Madame Arnaut, a butcher woman, aged 35 years, of strong constitution, in the seventh month of pregnancy, was attacked in a similar manner and in the same degree. She vomited continually a greenish matter, as in the preceding case, for which I bled her ten times, applied leeches as often, and had recourse to opiates. The vomiting finally ceased, and the epigastric tenderness disappeared by the 38th day. Her diet was extremely rigid, I interdicted even bouillion. Several times I believed her expiring; her pulse became small and frequent, and her countenance anxious. A small emission of blood calmed these symptoms., The syrups of poppies and morphine, and opiated lavements, calmed the irritation, and allowed nature to triumph over the disease.

Obs. 5th. Rousseau, a soldier, aged 24, of small stature and moderate strength, on the last day of February was seized (without any apparent cause,) with vague but cutting pains in the abdomen; during the night he had three attacks of *vomiting*, the matter ejected was yellow, and was accompanied with a bitter and acid taste. The vomiting continued the next day; he took an anodyne potion, which appeared to suspend it, but it was for a short time only. The patient entered the hospital in the afternoon, when his eyes were sunken, his countenance haggard, his face moderately flushed, belly tense, pulse small, hard, and frequent, skin cold, though he complained of warmth, *decubitus dorsalis*, porreaceous vomiting, eructations, and borborygmus. (Bled to the extent of 12 ounces, 25 leeches on the abdomen, warm bath, draught of ol. almonds and 10 drops of laudanum.) Symptoms not meliorated, hiccough, and dysury. (Four ounces of syrup of morphine to be taken in divided doses in the 24 hours, cataplasm of linseed to the abdomen.)

On the 4th day the pulse quickened, the skin became hot, the countenance animated, the abdominal muscles contracted forcibly, there were also acute pains in the loins. (Bath, 30 leeches to the hypogastrium, the bites of which bled freely.)

During the time he was in the bath he had *continual vomiting* of greenish matter. When he left it, the bleeding from the leech bites was stopped. (Ordered a mucilaginous draught containing morphine, with a mucilaginous lavement, and for diet, buttermilk.) No evacuation from the first day of the disease.

The vomiting continued on the 5th day, though less colored, abdomen less sensible. The patient declined the bath, saying that it made him too weak. (Emollient lavement, which procured three evacuations, draught of one ounce of syrup morphine, cataplasm to the belly.) Pains in the abdomen increased, obliged to remove the cataplasm—fomentations scarcely endured. (One ounce of the syrup of morphine.)

6th Day. Countenance anxious, fainting, pulse frequent, tongue yellow, vomiting frequent, abdomen very painful to the touch; several tumors about the size of an egg on the abdomen —urine scanty—the bowels spontaneously opened once. (Two ounces of syrup of morphine to be taken during the day.) Passed a bad night; in the morning hiccough, restlessness, debility, pulse weak, less pain in the abdomen, tumors not so salient, vomiting abated. (To have four *choppins* of gum water, with two ounces of syrup of violets, and the same quantity of syrup of morphine; lavement, containing 25 drops of laudanum.)

8th Day. Better—vomiting of yellow matter. (Bath for two hours, orangeade.)

9th Day. Improving; abdominal tumors have diminished to one-third the original size; has had some bouillion, which was rejected. (The same prescription as yesterday.) On coming out of the bath he passed with pain a quantity of thick and high colored urine.

10th Day. Hiccough returning at intervals—four liquid stools.

11th Day. Evacuations by urine and stool—the vomiting has ceased, hiccough trifling, skin warm. (Rice.)

16th Day. Contrary to my orders the patient arose, walked to the fire-place, and commenced talking. He was seized with delirium, his eyes became fixed, his pupils dilated, and his members rigid. He was immediately carried to bed, sinapisms were applied to his legs, and cupping-glasses to the nape of his neck, which removed the spasmodic symptoms; and on the 37th day the patient was discharged, cured.

In this case the opium was the grand resource, for the lowness of the pulse would not admit of vascular depletion.

In the following unfavorable cases, opium was not employed to any extent.

Obs. 6th. Madame Barrillon, aged 39 years, was seized with vomiting of yellow and greenish matter, accompanied with fever, swelling of the abdomen, constipation, diminished secretion of urine, skin hot, dry and coated tongue. She was bled to the extent of three *palettes*, and took effervescing and antispasmodic draughts. During the latter stage of the disease leeches were applied. The patient died on the 14th day.

Obs. 7th. Bernier, a gendarme, aged 30, robust, entered the hospital in the month of August, 1828. He was restless, face yellowish, tongue red, skin hot, pulse frequent and hard. He complained of pain in the head, and had porreaceous vomiting. He was bled twice, and had leeches to the epigastrium.

5th Day. No fever, cephalalgia diminished, vomiting continues, and is accompanied with bitterness. (15 grains of ipecacuana.) At night he had copious vomiting and violent fever. The next day hiccough was added to the symptoms. (Leeches to the epigastrium, followed by a cataplasm—ice water to drink.)

7th Day. Violent headach, adynamic phenomena, tongue dry, teeth covered with fuliginous matter, yellowness of the skin. (Bled from the saphena.)

10th Day. Abdominal meteorism, pain at the precordium, which the syrup of morphine could not allay.

11th Day. The patient expired, sensible.

Dissection.

Meninges injected; two small abscesses in the sub-mucus tissue of the great *cul-de-sac* of the stomach; this viscus was slightly injected; intestines and their fatty appendages tinged yellow; peritoneum covered with an albuminous secretion of two lines in thickness, also yellow; on removing this exudation, the peritoneum was seen highly injected.

In this case it is evident that the disease originated in the peritoneum, and that the cerebral congestion was secondary. The abscesses in the stomach would have opened by the ulceration of the mucous tissue, and considering their size would no doubt have terminated favorably.

The dangerous method of curing vomiting by emetics was here adopted under apparently favorable circumstances; its effect was injurious, it aggravated all the inflammatory symptoms.

Obs. 8th. M. Henri Maumet, a young advocate, of melancholic temperament, pale visage, muscular, had been for some time subject to colic and obstinate constipation, was seized with cutting pains in the abdomen, accompanied with porraceous vomiting. He was ordered the warm bath, anodynes, lavements, and emollient fomentations. The next day he was bled; pulse small, countenance anxious; belly so tender that he could not endure the fomentations; his epigastrium swelled regularly after the vomiting; tongue moist, hiccough; (50 leeches to the abdomen,) their bites bled all night. (Syrup of morphine, butter-*milk, orangeade*, gum water.)

3d Day. Symptoms moderated. (Bled from the arm, 15 leeches to the anus, bath, lavements of the infusion of linseed and poppies.) On the following days the belly presented irregular and hard tumefactions, particularly towards the right illiac fossa. To arrest the vomiting, opium, syrup of morphine, ice-water, and opiated lavements, were employed without success; no discharge from the bowels. (Two ounces of ol. almonds and one ounce of castor oil.) Purgatives had relieved this young man heretofore in circumstances nearly similar. To the oily draught I added one ounce of syrup of diacodium. Two bilious stools were procured, without relieving or exacerbating the symptoms. The patient became pulseless, covered with a cold sweat, and expired on the 9th day. In the course of his illness he had 125 leeches applied to the belly, the integuments of which were much ecchymosed.

Dissection.

The duplicatures of the peritoneum were united to one another by false membranes, its entire surface was covered by an albuminous exudation, and greenish pus of two lines in thickness. This exudation was in a state of gangrene; the pelvis and posterior part of the abdomen were full of pus; the organs themselves were not materially changed; the intestinal tube presented some reddish spots; the substance of the liver though redder than is usually observed, was not otherwise unhealthy. It is evident that such an amount of disease could not have been produced in nine days. The peritoneum must have been for some time in a state of chronic inflammation.

Purgatives, in this case, were inadmissible, for the tumors of the abdominal parieties, the periodical tension of the epigastrium, the fever, and soreness, contra-indicated them. Purgatives by their irritating qualities would, without doubt, have aggravated the inflammation and attendant spasm, thereby increasing the constipation they were intended to relieve. These cases prove that an inflammation of the peritoneum may excite all the gastric phenomena in them observed. Chemical analysis of the matters ejected from the stomach, shows them to be composed of mucosities, some acid, and bile highly colored.

Some may be surprised to see me adopt such active depletion in a disease in which debility is so soon induced. The liver, pancreas, and spleen, sympathise with the inflamed peritoneum, and we know that sanguinous depletion is of great utility, even in sympathetic affections of the parenchimatous viscera.

Furthermore in diseases accompanied with great anxiety, in which all the systems are implicated, and the nervous sensibility is quickly exhausted, bleeding is of great utility in diminishing the spasm and irritation.

Finally in peritoneal inflammation after general bleeding, leeches are of great utility in diminishing the local engorgement, and destroying the circle of morbid influences.

Case of Diffuse False Aneurism, by JOHN BELL, *of Great Grimsby.*

On the 24th of April, 1829, I was requested to visit J. T. ætat, 16, who was laboring under a "diffused pulsating tumor," occupying full two lower thirds of the inner surface of the right thigh. At the lower third of the limb, a wound was observed, which upon inquiry, I learnt had been inflicted on the 3d instant by a broad penknife, the blade passing in a direction obliquely upwards and inwards.

A very violent bleeding followed the infliction of the wound, which was suppressed by the application of a quantity of tobacco tightly bound over the orifice by some of his fellow servants. About three weeks elapsed from the receipt of this injury, and during the first fortnight, every thing appeared going on very favorably. From the bleeding being so easily commanded; from its not flowing *per saltem*, and from the absence of any tumor in the situation of the artery, it was naturally inferred that the artery was *not* wounded. The patient, however, was still confined to bed, and on Sunday the 19th, a severe hæmorrhage took place, which was repressed by the former application before any medical assistance arrived. During the night and following day he suffered severe pain in the limb, and a tumor was now evidently *forming in the* situation of the wound. From Monday to Friday three bleedings took place, which were repressed with the tourniquet. The swelling rapidly increased, and when I visited him on the 24th, had extended over two-thirds of the inner aspect of the thigh; his pulse remarkably quick; indifferent appetite, and his face completely blanched. There could no longer be any doubt respecting the nature of the disease, as pressure upon the artery in the groin arrested the pulsation in the tumor and rendered its substance much less tense; and upon the pressure being removed, both the pulsation and tension returned.

On the 25th, in consultation, it was determined to secure the artery, which was effected by making an incision along the outer edge of the sartorious muscle, to the extent of five or six inches, taking the original wound as the centre. By carefully removing a large quantity of fluid and coagulated blood, the wounded artery was exposed, running between the bone and tendon of the abductor magnus; then carefully separating it from its sheath and immediate connexions, a ligature was placed above and below the opening in the vessel. The sides of the wound were approximated by sutures and simple adhesion; Directions were given to preserve the heat of the limb, by the continued application of bottles filled with warm water and enveloping it in flannel.

Very trifling constitutional disturbance ensued, with very moderate suppuration from the wound, and in one fortnight from the operation, the ligament from the artery separated, at which time I discontinued my regular attendance. It is now upwards of two years since the operation was performed and the patient expresses himself as having experienced a most perfect recovery, the affected limb being in no respect deteriorated by the injury.

Case of Glanders in the Human Subject, by J. L. Levison, Esq., *Surgeon, London.*

Having seen, in some of the late numbers of *The Lancet*, two or three interesting papers on the subject of the glanders, wherein it was contended by one writer that it was infectious, and by another that it was not, it occurred to me that the following case, as far as I could collect evidence of its history, did certainly go far to prove that the virus of an affected horse will produce a specific effect in man, and that when absorbed into the system, the consequences are of a distressing nature, producing in some instances, death, but probably the virulence of the poison and the results may be modified by the age, temperament, and bodily health of the affected person.

As the case is one of a peculiar kind, I shall preface my account of it with some brief remarks on the history of the sufferer, who was a coachman named Norbrook. In person he was short, thin, and very dark, of a bilious temperament, and the son of a man of color who had also held a similar situation on the road for many years.

Bill Norbrook, jun. (the subject of this notice,) latterly drove the Norwich and Wisbeach coach: on the night on which he received the fatal infection, he had arrived in Wisbeach very much fatigued, having refreshed himself, and being sleepy, he drew himself to the kitchen fire, unbuttoned the knees of his breeches and fell into a sound sleep. On awaking, he felt a smarting sensation and discovered that the fire had drawn a small blister on his knee. With the wish of obtaining immediate relief, he took a lancet from his pocket and punctured the blister in order to let out the contents. It happened that he had used the same lancet to one of his horses supposed to have had the glanders, and had put it up without wiping the point. The effects of the poison did not produce any immediate inconvenience, and two days elapsed before its absorption into the system produced the horrid consequences I am about to describe. He was seized with a kind of brain fever, which made him quite mad. It was curious to observe the nature of his delirium, for if incoherent on many things, yet when speaking of horses or coaches, he maintained more connected associations. This state continued two or three days with only a few intervals of quiet, till at last the malady became so great, that to keep him from getting up, the attendants put ropes to the bed posts and gave them to him as reins, and in this manner he continued driving to the last, thus illustrating "the ruling passion strong in death."

Dislocation of the Head of the Radius forwards, by James S. Whitaker, F. L. S., *Shoreditch.*

Examples are continually brought to me, of an accident occurring to the elbow joint in young children, which I do not recollect to have seen described as peculiar to early childhood, or indeed described at all. It is a partial dislocation of the head of the radius forwards. As far as I have inquired, it universally happens in the following manner:—A person grasps the forearms of a child and raises it from the ground some height; the child's arms cannot be maintained perpendicularly the whole time, but as the child is raised higher, the arms are brought more and more towards a right angle with the body; the forearms are consequently made to act somewhat as levers, and the power required by the hand to apply them as such in raising the body, is sufficient to remove the head of the radius partly from its socket, and would altogether dislocate it did not the ulna prevent the whole force from being exerted on that bone.

The symptoms of this accident are sufficiently distinct. The arm is semiflexed; forcible flexion or extension causes great pain; the hand is nearly prone; nothing can induce the child to lift the arm, or move it in any direction, and in spare children about two-thirds of the head of the bone may be felt projecting in front of the external condyle of the humerus.

The reduction of this dislocation is exceedingly simple, for if the wrist be taken hold of, and rotation performed two or three times successively, the muscle will immediately return the bone. After this the child will move its arm freely and receive any thing offered it. From the many cases occurring to me, I am sure the accident must be common, but can easily conceive that it might be constantly overlooked, because in an examination of the limb rotation is always had recourse to, so that the reduction in this case is effected, and no injury suspected to have existed.

Remarks on the Treatment of Cholera, by ERICUS WARING, Esq., *Surgeon, Margate.*

The great attention which has been directed to the subject of Cholera, during the present summer; the alarm occasioned by it in many families, and the mode of treatment adopted in some lately published cases, induce me to trouble you with this communication; for notwithstanding its great prevalence from local causes in this neighborhood, and the occasional violence of its attacks, yet there must, I confess, some great change take place in its nature, or in the efficacy of our present remedial means, ere I shall be induced to resort to the administration of laudanum by the ounce, or to assist the warm baths and stimulants in producing reaction and warmth; by directing "cloths wetted with chloruret of lime to be hung round the bed." Neither do I feel disposed to try the hydrocyanic acid "in all cases depending upon an irritable state of the stomach and intestines."

I confess too, that I have yet to learn how "the pressure the liver receives in the act of vomiting" can occasion any additional flow of bile into the *equally compressed intestines*, and feel disposed to continue in the good old belief, that the liver is frequently the principal cause of the mischief. Considering the time of year of its attack, and that "one of the immediate effects of the calorific rays of the sun is to stimulate the liver to an excessive secretion of bile, and that hence the alimentary canal is overloaded with it and perhaps the blood impregnated," it does not seem extraordinary that, under such circumstances, suppressed perspiration, cold drinks, or indigestable food, should occasion sudden and severe derangement of health. By keeping this in view and attending to the peculiarities of each individual case, there will be no difficulty in adopting such a plan of treatment as must speedily prove effectual. This may be three-fold, according to the nature of the attack. In the first, where a sense of fulness at the stomach, and constant nausea make it apparent that depraved or superabundant secretions and acid injesta are offending, and the other symptoms are not extremely severe it will be proper, after having produced re-action and cleared the stomach by a gentle emetic, to administer diluents and laxatives in small and repeated doses, and alterative doses of mercury if required. But if the severity of the spasms be very urgent, or the retching and anxiety very considerable, or the patient be of a delicate habit and irritable temperament, it will become necessary after the warm bath or pediluvium (having cleared the stomach with an emetic) to administer a free dose of solid opium; this speedily allays all irritation and sickness, assists in restoring the proper balance of the circulation, and frequently produces a refreshing sleep, after which the stomach easily bears the administration of the laxatives and diluents necessary to complete the cure. But in the more sudden and severe cases, and which cannot be so distinctly traced to any very obvious cause, where the sickness is severe and constant, the spasms general and very acute, and the depression of the vital powers very marked, all thoughts of emetics or aperients must be laid aside, the warm bath and stimulants and especially dry warmth to the pit of the stomach, with opium in free doses and in small compass, should be immediately had recourse to. If on a fair trial it does succeed in checking the sickness, the hydrocyanic acid may then be administered with decided effect; but as a common remedy in Cholera, it is probably inferior to opium, from the increase of circulation and determination to the surface caused by the latter. The sickness and spasms having been thus overcome, and re-action fully established, warm diluent drinks, and gentle purgatives soon restore the sufferer to convalescence.

The three following condensed cases will illustrate the different varieties in the plan of treatment.

Case 1. *Sept.* 2, 1831. H. T. head waiter at a large tavern, after a severe day's work, and having had but one slight meal, was taken suddenly, at 10 P. M., with faintness, soon followed by sickness, severe pain and sense of fulness at the stomach and bowels, great thirst and anxiety, with coldness of the extremities, and spasms extending over the body and extremities, but particularly severe in the calf of the right leg. Having had his legs placed in hot water, and taken some warm drink, he vomited a considerable quantity of yellow and greenish fluid and partly digested food, after which the sickness abated. He was now wrapped up warmly, and ordered warm drinks, and to take gr. x. of blue pill directly, and a draught containing sulphate of magnesia, and rhubarb to be given with it, and repeated every three hours. The circulation soon became restored, and the surface of the body exceedingly hot, accompanied with some pain in the head and slight delirium, increase of thirst, and distension of the bowels, which continued till 4 o'clock, A. M., when the medicine producing several copious and offensive evacuations, he broke out into a profuse sweat, and was relieved of every bad symptom. At 8 o'clock, the principal complaint he had to make was of the extreme soreness of a "knot" in the calf of the right leg, the consequence of the spasm of the previous night; he had still thirst, and a furred tongue, which were removed, and the evacuations brought to a healthy character, by the continuance of the mercurial alterative and aperient for two more days.

Case 2. *August* 22, 1831. Miss C. æt. 18, of delicate habit, had on the previous day eaten roast duck and giblet pie; during the night the catamenia (it being their proper period,) appeared in small quantity, accompanied with pain, and about 5 o'clock, A. M. she was taken with itching, pain in the bowels, and purging, which symptoms gradually increased, till at 10 o'clock she was found to be suffering from them very severely, accompanied with coldness of the extremities and surface of the body; pulse extremely weak, great anxiety, and severe cramps of the legs, extending up the thighs, less violent in the arms and trunk, but very severe in the back, and darting through the pelvis. After a hip bath, an emetic was given, which operated copiously; two grains of opium in substance were shortly afterwards administered, which allayed all pain, spasm, and sickness, and produced perspiration, and a comfortable sleep. The usual aperients being afterwards given, she was on the following day about the house, and on the next perfectly well.

Case 3. *Sept.* 9, 1831.—2 o'clock, A. M. W. C. waiter at a hotel, about 50 years of age, corpulent and of a bilious habit, was suddenly taken, an hour ago, with the following symptoms:—constant and violent sickness, vomiting a clear liquid, but with great straining; excessive thirst; has been purged ten times this last hour, with great pain and gripings; tongue dry, with red edges, but not coated; breathing short and much oppressed; circulation languid; countenance sunk and depressed, indicative of acute suffering; extremities and surface of the body cold; great restlessness; the cramps affect nearly the whole body, and the contractions are so severe, that the finger may be laid in the furrow made in the gastro-enemii. His powers are evidently overcome by the violence of the attack; the feet were immediately placed in very hot water, and he took,—*Tinct. Opii, m.* xxx. *Spts. Ammon. Ar. m.* xl. *Aquæ,* ʒ i. *m.* This giving no relief, he was ordered, *Opum, gr.* ii. *Statim Sumend. et repet. in duabus horis.* Two additional blankets had been placed over him, 8 o'clock, A. M. By about 4 o'clock re-action had taken place, the feet and surface became and continued warm, pulse fuller and quicker, slight pain across the forehead, sickness not relieved, great tenderness in epigastrio, cramps less severe, thirst still violent, tongue red and very dry, countenance anxious; restless; bowels not open since 2 o'clock. ℞. *G. Opii, gr.* ij. *statim sum. Empl. lyttæ ampl. scrobic cordis.* To take nothing into the stomach but cold water, and that only by sips. One o'clock, P. M. In all respects much the same. ℞. *Acid Hydrocyan, m.* ij; *Aquæ,* ʒ i. *m. 2 da. qq. hora sum.* Six, P. M. Has taken the acid three times; the sickness has quite ceased; pain at pit of stomach relieved; bowels open three times, motions exceedingly offensive; slight pain in the head, no doubt occasioned by the opium and acid; has had the cramp but once; is in every respect better. ℞. *Magnes. Sulph.* ʒ iss. *P. Rhei, grs.* v. *4 ta qq. hora;* tea and gruel.

Sept. 10th. 8, *A. M.* Has had some sleep, and is free from sickness and cramp. Medicine has produced several copious and highly offensive bilious motions—pulse is full—much thirst. Continue the purgative, and take *Opii, gr.* jss. at bedtime. On the next day he was convalescent.

Remarks on the existence of Cholera in England, with Cases.

By H. K. Randell, Esq. *Surgeon, Rotherhithe.*

However deserving of confidence the opinions of Dr. James Johnson may be with the public or the medical profession, I must confess myself skeptical as to the truth of his predictions respecting the cholera, which has lately raged with such violence on the shores of the Baltic, and is now desolating several of the German states, "that it will never prove formidable in England;" I agree with him, that it is matter of importance to guard against what is termed "*cholera-phobia;*" yet when facts interpose themselves, and come under one's immediate observation, hypotheses, however well-founded, and conclusions, even when drawn from apparently legitimate sources, can no longer be relied on. Doubtless the lowness and the variations of temperature to which England is subject, do constitute very great physical barriers to the operation of the cholera, and contagion generally, as do likewise the breadth and cleanliness of the streets in some parts of our metropolis. But at least, one-half of the population of London and its suburbs have no such advantages. I allude to those thickly populated districts where the population is inconceivably dense, the houses small and low, the drainage incomplete, and ventilation very bad. The habits too and mode of living in these districts are so irregular, that the constitutional powers of the inhabitants are in a feeble state, and doubtless, if exposed to the influence of a contagion which has proved so destructive to life, they would speedily fall its victims. If then the cholera has already manifested its virulence in districts reputedly healthy, who shall say that it will not break out in those which are the contrary. I am far from wishing to create alarm, but my attention has been much excited to this subject by a plain observation of facts. *I have certainly met with cholera in a more virulent degree than I ever before witnessed;* and two cases in point I shall subjoin. I believe I am not singular in dissenting from Dr. Johnson's opinions on this subject. I have met with some of our highest professional authorities who entertain similar opinions to my own; and if it really be true that *there is "a pestilence which walketh in darkness,"* observing no regular or even track, desolating various parts of Europe simultaneously, pursuing its murderous course in the face of adverse winds, and visiting countries in which in its present form it had never before been heard of, who can say that England will be exempt?

Case 1. Early on the morning of the third of last month, I was requested to visit Mary Reed, æt. 22, a young woman of an athletic frame and constitution, who I was told was dying. On reaching the house, I learned that she had gone to bed at ten o'clock on the preceding night, in excellent spirits and apparently perfect health, having taken some bread and butter and half a pint of porter for her supper. About two in the morning she awoke with considerable pain in the right hypochondrium, extending downwards to the umbilicus; this was of an acute character, and was speedily followed by excruciating cramps of the arms, legs, and thighs, and the flesh of her belly, they told me, appeared drawn into lumps; vomiting of a dark billious matter, mixed with something like oatmeal grains, and of an exceedingly nauseous and bitter taste, quickly preceded the accession of pain in the belly, and with it the most profuse purging; the matter ejected and dejected had a most offensive smell, so much so as scarcely to be borne. In less than two hours she was so reduced that the stools passed involuntarily, and she had scarcely power to raise her hand to her head. On entering the room, her position was supine in the extreme, the countenance so altered and ghastly, that I sat some little time by her bedside before I recognised her as the individual I had seen nursing her child in the street, on the preceding evening, apparently in the most robust health. Around the eyes, which were now deeply sunk in the sockets, the skin was of a dusky purple; the features were altogether more shrunk than I had ever before witnessed in any case; the alæ nasi were so pinched in as to lead one to suppose it was not possible for her to breathe through the nostrils; the lips were also of a dusky purple, as were likewise the nails of the hands and feet; the whole surface was dark, and of a death-like coldness, and, in short, the entire capillary circulation appeared to have ceased; the tongue was thickly coated with a dirty brown fur; respiration slow and faint, and the pulse thready, intermitting, and for seconds together scarcely perceptible; in fact she appeared to be in a state of approaching dissolution. Before seeing her, vomiting had ceased, but she suffered dreadfully from retchings, which occurred about every twenty minutes, and these were immediately followed by the most agonising cramps, which, faint as she was, compelled her to scream out. Whilst sitting by her bedside, she was seized by one of these paroxysms, which lasted about two minutes, although I was told they had been of longer duration. During the fit the pulse could not be felt, and was hardly perceptible for some minutes afterwards. As no time was to be lost, I immediately gave her a large dose of brandy, and ordered her to be plunged as quickly as possible into a warm bath for twenty minutes; the brandy was almost immediately ejected. The following mixture was ordered to be administered:—

℞. Ammoniæ Carbonatis, ʒj;
Tinct. Opii, ʒij;
Mist. Camporat. ℥vij. ft. mis. cujis capt, 4 tam part. omni hora.

The first dose was given whilst the bath was getting ready, and, like the brandy, was speedily ejected; the second was administered just after a paroxism of cramp, and whilst in the bath, and was partly retained, as was the whole of the third, after which the retching subsided, and the cramp became less violent. She expressed great comfort from the bath, and after having been taken out, she was placed between warm blankets, and bottles of warm water were applied to the soles of the feet and palms of the hands. After an interval of three hours I visited her a second time, and found, that, although she had had several attacks of spasm, yet that she was warmer and felt better; the pulse was stronger, the countenance less sunk and anxious, but there was still great prostration. Nothing however had passed her rectum since leaving the bath. I ordered her to sip a little warm arrow root occasionally, to repeat the bath as before, and the mixture, a quarter part of which was to be taken every two hours.

Nine o'clock, P. M. Astonishingly improved; surface generally warmer; feels quite comfortable ever since the second time of being put into the bath, and has had no recurrence of spasm whatever from that time. The countenance is no longer expressive of distressing anxiety, but is calm and almost natural; pulse stronger and much more expressive, tongue white; in short, she does not appear like the same woman. She complained, however, of great soreness of her body and limbs generally, (doubtlessly the effects of the spasm,) on which account I directed the repetition of the bath, and ordered her to take ten grains of the compound powder of ipecacuana after coming out of it.

August 4. She slept soundly during the night; the soreness is much better, all dangerous symptoms have left her, and she merely complains of weakness and a feeling of sinking at the precordia. Good animal diet and port wine were recommended, and aromatic tonics were prescribed. She has continued perfectly well to the present period, and has regained her wonted looks of good health.

Case 2. I was called to this patient, (a woman of 50,) about four hours after the commencement of the attack, whereas in the former case seven hours had elapsed, and consequently I had an opportunity of personally witnessing the disease before it had produced that excessive collapse, which had so nearly proved destructive to life. The symptoms, however, were precisely *similar*, excepting that the spasms, if any thing, were more severe, and occurred at much shorter intervals; and so dreadfully affected were the flexor and extensor muscles of the hands, that the fingers were drawn in the most opposite directions. The matter vomited by this patient was, however, of a darker color, and more resembling coffee-grounds, and emitted a strong acid smell. The feculent dejections, streaked with blood, were passed involuntarily, and produced a burning sensation at the anus. The agonies of the poor creature during the continuance of the spasms were heart-rending to behold. A similar plan of treatment to that of the first case was adopted with this patient, and with the best results. The return to convalescence, however, was slower, and she has not yet recovered from that excessive state of debility into which she was brought by the violence of the attack.

Severe Case of English Cholera, by Mr. J. Burgess.

The patient, aged 66, was a nurse in St. Giles's work-house, who, it appears went to bed perfectly well on the 2d of this month, and about an hour after was attacked with the most distressing vomiting and purging, and with cramps in every part of her body, to such a degree that her arms were drawn up to her shoulders, the fingers completely shut, the feet and toes drawn upwards, and the calves of her legs in large knots, and a pricking sensation was felt all over her body and face. The ward she slept in was in a distant part of the house, and owing to a mistake in locking a door, which was usually kept open all night, she could not obtain any assistance till the morning, when I never witnessed a human countenance so ghastly; her face was almost blue, the cheeks were hollow, the eyes sunken and wide open, with a wild stare; she had cold clammy sweats, and the pulse was almost imperceptible.

In such a deplorable case, I confess I was at a loss to know how I could relieve this poor creature, but as there was no time to be lost, I first directed her legs to be put in warm water up to her knees, and well rubbed with warm flannels, and wrapped in flannels made hot. The arms were rubbed with soap liniment, opium, and ammonia, and were also wrapped in flannel. I gave her a mixture of brandy, and full doses of opium and ether every hour, each dose of which her stomach rejected. I then gave an effervescing draught of mint-water, opium, and a little brandy, every hour, which remained on the stomach, and after taking three doses the vomiting nearly subsided, and she slept for an hour. I continued these draughts every three hours, and she had some more refreshing sleep. Vomiting now entirely ceased, but the purging went on, for which the chalk mixture, *kino, pulv. rhæi.* and *tinct. opii*, were given, which reduced the number of motions from four in an hour to one. I continued this all day, giving occasionally a little warm wine and water. In the course of the evening re-action came on, the pulse got up, the skin became warm and moist, and the spasms nearly left her, except a trifling pricking sensation in the wrist and insteps, in fact, her face assumed its natural color, and she considered herself getting well, but was very sore and weak. At length, however, this poor woman entirely recovered.

Case of Rapid Ossification of the Fibro-Cartilaginous Tissues, or Pure General Anchylosis, by Philip M. Lyons, Esq. *of Brighton.*

Thomas Ratcliffe, a mason, residing in the Isle of Man, aged 36, of healthy parents, always enjoying good health up to the time of being afflicted with his present complaint, was seized about seven and a half years ago with a dead and numbing pain in the right elbow-joint, which though unaccompanied with redness or swelling, in a month completely deprived him of the use of it; an attempt made by a surgeon to extend the arm, very much exasperated the complaint. In about three months after, he was attacked in a similar manner in both knees. His sufferings were now constant and accompanied by a sense of constriction in the diseased joints, though none of them showed any external symptoms of inflammation; he was blistered and ordered large doses guiacum, with hot salt water baths, but obtained no relief. Being deprived of the use of his right arm, and advised blood-letting, he had about 20 ounces taken from his left arm; he *instantly* lost all power over the elbow-joint of that limb, and experienced the same pain in it as in the others; all the rest of his joints were now affected in succession, as also was the spine generally, and in a year and a quarter he was rendered unable to leave his bed or sit up; on being asked if he thought his complaint originated in cold, he replied he did not, as he had always enjoyed excellent health, even to the day when the disease first showed itself, and the preceding winter had been a particularly fine one. His sufferings continued for about three years and a half, when they altogether ceased, except on the joints being moved. Present state:—Considerable emaciation; appetite good; bowels regular; great thirst, which is attributable to his constant perspiration; urine, which when he was first taken ill, used to deposite copious quantities of a white earthy sediment, is at present of a natural color, but rather scanty, sometimes red, but without any deposite; all his senses perfect except that of hearing. Has had two children since the commencement of his illness, the youngest about *a year and a* half old. The pulse at wrist 70, soft and regular, beat of heart 100, small and regular, audible over left side of anterior portion of chest, slightly so on right side, aortal pulsation audible below umbilicus; respiration pure, but only slightly perceptible on anterior inferior portion of chest, distinctly so on superior; voice brazen; none of his joints in the slightest degree enlarged, and no ossific deposite to be detected in any muscular part of the body; head firmly drawn to left side; slight command over superior cervical vertebræ, but none other; partial motion of lower jaw; larynx appears to be completely ossified, and as it were drawn down into the chest; sternum depressed, ribs flattened, and cartilages ossified; some elevatory power of right shoulder; complete anchylosis of right elbow in semi-flexed position; wrist straight and prone; fingers flexed and immoveable, except little one; left arm capable of being slightly raised, elbow fixed in bent posture; wrist and fingers fixed; thumb retains some slight power of flexion; partial motion of hip and ankle joints.

The first and most remarkable fact connected with this case, is the great difference between it and those which have been classed under the same head. In all the cases that have been recorded in various journals, we universally find the disease not to be anchylosis, properly speaking; but an excessive deposite of osseous matter, without any limitation either of part or structure. Thus, in the famous case of Clarke, (whose skeleton is preserved in the museum of Trinity College, Dublin,) we find this earthy secretion not confined to the bones or ligaments, but extending to the bodies of the muscles, and I believe even to the enamel of the teeth. The same observations may be made of all the other cases on record, while in that before us we find a beautiful specimen of *pure general anchylosis*. Another interesting feature in this case is, the rapidity with which the disease accomplished its ravages on the various joints, the short period of a year and a quarter having only elapsed from its first commencement till it had destroyed every articulation. A circumstance well worthy of observation in this disease is, that all those victims to it whose histories have reached us, were inhabitants of moist cold climates. The sudden paralysis and subsequent disease of the left elbow, instantly following the loss of blood from the same arm, are well worthy of notice, as displaying in a striking manner the ill effects of debilitating remedies in this complaint. Lastly, I would draw attention to the extraordinary quantity of earthy matter removed from the system by means of the urine, during the acute stage of the disease, and which was at one time so excessive, that if a drop fell on the floor it left a white crust behind. This circumstance is worthy of consideration, since, if after a close inquiry, we can discover that it attends other instances in ever so mitigated a form, it may not only lead us to an early knowledge of the complaint, but also point out to us that mode of cure which nature herself seems inclined to adopt.

Case of Hydrophobia, by WILLIAM SIMPSON, Esq. *of Hammersmith.*

William Brister, æt. 53, tall and muscular, complained, on the evening of 28th of August, of pain in the neck and right shoulder. He with much reluctance went to work early on the morning of Monday, but was unable to do any thing, and came home in the afternoon, when the pain had extended into the right axilla. He procured some volatile embrocation, with which the parts were well rubbed. He was much distressed with pain and restlessness during the night, and on Tuesday morning the pain had extended down the arm and across the chest; he endeavored to drink some porter, but was unable; tried to take it from a tea-pot, but without effect. About noon he was seen by Mr. Graham, an intelligent practitioner, who not having been informed of his inability to swallow liquids, naturally attributed the symptoms to rheumatism, and ordered some calomel and colocynth, and a black draught. He was unable to take the draught; the pills operated freely; during the afternoon and evening symptoms of great perturbation of mind manifested themselves, and in the night he became very outrageous, and required three or four men to restrain him. About noon on the Wednesday I saw him, he approached me with clenched fists, in a menacing attitude, accompanied with an hysterical laugh, and a kind of howling noise, and great contortion of countenance. I naturally stepped back a little, when he composed himself, sat down, and told me I had no occasion for alarm. I felt his pulse, which was but slightly quickened; he had no fever, and answered my questions rationally. In about a minute he got up and rushed furiously across the room, then threw himself on the table, like a person laboring under a violent fit of the colic. He said he had no pain during the paroxysms, only a slight pressure at the lower part of the abdomen, and a sensation like a ball rising in the throat, and of suffocation. I began to suspect hydrophobia, and ordered some water to be given him; before it approached his mouth he ran back, and had a violent fit; porter was tried, but with the same effect; and he said if any more were offered him he would knock them down. On asking him to what cause attributed his complaint, he said he was bewitched or laboring under an evil tongue. He denied having been bitten by a dog. About four in the afternoon he began to vomit dark matter like coffee-grounds, after which he could drink peppermint-water and other liquids, but which did not remain an instant. *He became* calmer, but vomiting continued till within half an hour of his death, which happened about 12 o'clock at night. Upon inquiry, I found he had been bitten by a puppy about three months before, but in so slight a manner as not to attract notice at the time. This puppy had also been bitten by another dog, and was killed soon after accidentally. A post-mortem examination was not allowed.

So far as my observations go, I think this disease approaches nearer to hysteria in its symptoms, than any other complaint. The patient did not appear to suffer near as much as in those cases of tetanus I have witnessed. All speculations on the cause or pathological condition on which hydrophobia or tetanus depends are idle. The primary symptoms are evidently to be traced to the nervous system, the minute anatomy of which remains for the present in obscurity.

On the Cholera of Infants, by Robert W. Wells, M. D., *Acting Surgeon U. S. A., Fort Wood, Louisiana.*

The mortality among infants in some of our large cities, during the summer and autumnal months, arising from bowel complaints, is truly frightful, and affords no very flattering evidence of the improved state of medical science in this country. The disease under consideration is more easily managed than perhaps any other to which children are subjected; but so long as it continues to be treated, as it too universally is, with calomel and other purgatives, so long will the bills of mortality give evidence of its unparalleled fatality.

The pathology of the cholera of infants is perfectly simple, and well understood. It is nothing more than the lining membrane of the intestinal canal in a highly irritated condition; and it is absolutely unintelligible that *Doctores Medicinæ* will still continue to treat this disease with purgative medicines, especially with calomel, which, it must be evident to the plainest understanding, can have but one effect, and that will be to add to the existing irritation, and consequently increase the disease they are pretending to cure.

When we consider the highly irritable condition of the intestinal canal in the healthiest children, which so frequently becomes disordered by the most trifling errors in diet; when we reflect upon the exhausting effects of an active diarrhœa, more especially in infants, even of an hour's duration; above all, when we look at the mode of treatment too generally pursued, with purgatives and astringents, so far from being surprised at the loss of life from the disease, our chief astonishment is, that the mortality is not much greater than we at present find it. The management of this disease is most simple:—a tea-spoonful or two of lime-water, with a few drops of the tincture of opium, say 5, or 10, or 20 drops, as the age of the patient or the case may require, given every hour or two during the day, with proper attention to the food of the child, will cause this formidable disease to disappear in an incalculably short period. So long as the bowels continue active there is not the slightest danger to be apprehended in the administration of opium. When the purging is arrested we must lay it aside of course; it is no longer necessary, the disease has disappeared. A moderate dose of castor oil may or may not be given; I do not believe it is required, though it will probably prove harmless; it is, however, the only cathartic that can be employed with safety. The early employment of astringent remedies, unless of the very mildest kind, and in combination with opium, cannot fail to prove injurious. Irritation of the mucous membrane is the disease, increased secretion and purgation the effect, the natural consequence. Irritations in all mucous membranes are succeeded by increased secretion, and in this manner terminate favorably. The vessels of the part relieve themselves in this way, and inflammation is thereby prevented. Common bronchitis is a familiar case in illustration. Now the effect of astringents *per se*, is to arrest the secretions without at the same time allaying the existing irritation, and as the vessels of the part are thereby prevented from relieving themselves, the consequence will be inflammation.

Every man must be aware of the danger in suddenly arresting, by the use of powerful astringents, an active diarrhœa, though it may be checked by large doses of opium with the most perfect safety. The rationale of this is abundantly evident; in the first instance, by the use of astringents, while the disorder itself remains untouched, you arrest one of those actions by which the part affected is enabled to relieve itself unassisted, the secretions from the vessels are checked, and the consequence is inflammation. In the second instance, by the use of opiates, the citadel is itself attacked and carried; the irritation is subdued, and all its consequences of course disappear. If those writers who recommend the employment of the acetate of lead and other powerful astringents in the treatment of dysentery and cholera, would reflect for an instant upon the effects which these medicines *must* produce, they would surely be convinced of the manifest danger of their administration in these diseases. If astringent medicines be used at all in the early stages of cholera, they should be combined with opium, though I believe the employment of them to be useless in this stage. In protracted cases, where the parts have lost their tone and there is no irritation remaining, the use of these remedies is undoubtedly advantageous—they become absolutely necessary. Lime-water, though slightly astringent, is not employed in the early stages so much for its astringent properties as *for the purpose* of neutralizing the acid that exists for the most part in the stomach and bowels. Opium alone, with a simple absorbent, is all-sufficient for the removal of this disease.

Under this simple plan of treatment I have repeatedly seen infants affected with active diarrhœa, the discharges mucous and bloody, with griping pains, restored to health in twenty-four hours, the stools becoming natural both in appearance and frequency. The simple truth is, that cholera, either as it affects infants or adults in our country, is not in itself a very dangerous disease, and would in a majority of cases effect its own cure without the aid of medicine. The fatality of the disease is to be attributed in a great measure to the injudicious manner in which it is treated. So long as the disease continues to be treated with purgative medicines, as long as the universal panacea, calomel, is relied on for its cure, so long will cholera infantum continue to be the annual scourge of our great cities.

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CASES IN WHICH THE PAROTID GLAND WAS SUCCESSFULLY REMOVED.

An undue respect for authority has created, in our profession, more evils than the effrontery of empirics. Every person should feel disposed to venerate talent; but none ought to receive maxims, even from the wisest, without the strictest scrutiny; for it is an undeniable assertion that a man of moderate parts and acquirements, may, in a great many instances, not only detect errors in the productions of his superior, but even be capable of correcting them. If all modern surgeons had prudently reasoned after this fashion, we would not have heard so much about the difficulties, nay, impossibilities of removing the parotid gland. To be sure, Allan Burns, Colles, and Harrison, have argued about the dangers and fatal consequences inevitably connected with such an operation; but Beclard, by the safe removal of this gland, proved their assertions to be futile.

It has fallen to my lot to have successfully performed this operation three times, and as every case tending to confirm the propriety of a procedure in practice, denied by some, doubted by others, and only admitted by a few, becomes important to the community, I shall briefly sketch those to which I allude.

Dec. 10*th*, 1827. Henry Hessender, æt. 24, robust and in good health, has a tumor of the left parotid gland, as large as the fist, hard, irregular on the surface, nearly immoveable, and attended with lancinating pains. He cannot open his mouth for more than three quarters of an inch, nor masticate with any degree of facility or comfort. The tumor has forced the side of pharynx before it, and projects considerably into the fauces. The disease succeeded to a severe cold, and commenced about two years since.

14*th*. At his and his friends desire, I operated this day as follows:—1st. I made a crucial incision over the tumor, and carried the perpendicular section for an inch and three quarters below the gland, and in a line corresponding to the anterior edge of the sterno-mastoid muscle. 2d. I reflected the flaps. 3d. I had the lower angle of the wound divaricated by narrow curved retractors, and the tumor carried upwards and outwards by a double hook, while I dissected inwards, dividing in succession the nervus ascendens colli, parotidean vein, and stylo-maxillary ligament. 4th. Being now better able to retract the sterno-mastoid muscle, I soon brought into view the posterior belly of the digastric, along which I cautiously dissected until I exposed its tendon and the inferior part of the stylo-hyoideus. 5th. I had the posterior belly of the digastric carried downwards and outwards by a blunt hook, while I dissected on, secured with two ligatures, and divided between them the external carotid artery. 6th. I detached the tumor from the sterno-mastoid muscle, mastoid process, and concha of the ear, (in which dissection the arteria posterior auris was divided and immediately secured.) 7th. I tied with two ligatures and divided between them, the trunk of the temporal artery, and carried the dissection along the anterior edge of the gland, dividing the branches of the external respiratory nerve* and the Stenonian duct, until I had elevated it from the anterior surface of the masseter muscle, and posterior edge of the ramus of the inferior maxillary bone. 8th. I fixed two double hooks, one on the anterior, and the other on the inferior part of the gland, then, with his head inclined to the affected side, I had the diseased mass carried upwards and backwards, while I lacerated its cellular connexions with the handle of the knife until I exposed the internal maxillary artery, which I soon tied and divided. 9th. The gland was separated from its bed by the use of a silver-bladed knife.

The angles of the wound were united by adhesive plaster; and the central part dressed from the bottom.

The operation lasted one hour and three quarters, and the patient, though much exhausted, did not lose more than six ounces of blood.

℞. Tincturæ Opii, ʒ j.
Aquæ Menthæ Pip, ℥ j. fiat haustus statim sumendus.

8 o'clock, P. M. Has slept three hours—does not suffer pain—is inclined to slumber.

℞. Tincturæ Opii gutts xxxv.
Aquæ Menthæ Pip, ℥ j. fiat haustus statim sumendus.
Lemonade.

15*th*. Slept five hours—some fever—pain of head and stiffness of the neck.

V. S. ad ℥ xx.
Inj'r Enema Com.
App'r Lot. Spirit. Camph. p. d.
Rep'r Haustus Anodynus ut antea.
Lemonade.

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* Paralysis immediately succeeded the division of these branches.

16th. Passed a good night—headache has subsided—less fever, pain and stiffness of the neck.

Cont'r Lot. Spir. ut antea.
Gruel.

17th. Complains only of pain in the neck and difficult deglutition.

Pergat.

18th. Do.

19th. Wound dressed—angles united—superficial dossils only removed.

20th. All the dressings removed—healthy supuration established.

Rice and milk.

The reports subsequently made on this case are devoid of interest, save, that on the tenth day he left his bed; on the eighteenth he went out, and on the thirty-second the wound was healed.

The disease has not since returned; but the paralysis of his face continues.

On examining the tumor, the external carotid, internal maxillary, and temporal arteries were found imbedded in it, as also the plexus of the portia dura. The nervous ascendens colli, and parotid vein entered its lower part, while the Stenonian duct and socia parotidis were attached to its anterior part. It was of a whitish yellow color, as hard as cartilage, and contained four cells, varying from the size of a pea to that of a filbert, and filled with a thick pulpy substance. Finally, it was surrounded by a dense fibrous capsule.

The next case was that of Mrs. B., a delicate woman, æt. 26, in whom the right parotid gland was as large as an orange, hard, irregular on the surface, nearly immoveable, attended with dull pain, and liable to inflammatory attacks, projected into the fauces, and rendered mastication and deglutition difficult. The disease was of three years standing, and commenced without any known cause.

I successfully removed the gland in one hour and sixteen minutes, and without more than the loss of four ounces of blood. The method pursued in this operation was exactly similar to that adopted in the case just described, with this exception, that before the diseased mass could be sufficiently retracted to enable me to expose the internal maxillary artery, I had to cut away its posterior part.

The wound healed kindly, the disease has not returned, and she enjoys good health. The paralysis of the right side of her face continues.

The gland was of cartilaginous density and yellow color.

The last case was that of Mr. M., between 22 and 23 years of age, small stature, but good constitution, who labored under enlargement of the left parotid gland for nine years. The tumor was about the size of the fist, hard, immoveable, with a cicatrice on the surface, caused by escharotics applied a few months previously by a noted empyric, from which time it grew rapidly, and was attended with severe lancinating pains. He could not open his mouth for more than half an inch, his mastication and deglutition were much impaired, and the tumor extended half way across the fauces. He could assign no cause for the disease.

All the usual remedies had been employed without any benefit.

On the 16th of September, 1830, I removed the diseased gland. I pursued the course detailed at pages 113, 114, but the operation was more difficult, in consequence of the strong adhesion of the gland to the mastoid process of the temporal bone, which was in a state of caries. In consequence of the adhesion just mentioned, I had to use, particularly towards the close of the operation, considerable force to dislocate the diseased mass.

The operation lasted for one hour and thirty-six minutes, and my patient was much exhausted, though he did not loose more than three or four ounces of blood.

The wound granulated from the bottom, and healed, save a fistulous opening communicating with the carious bone, in four weeks. The fistulous opening disappeared in two months. He is now in perfect health; but before I close I must *mention that* in April last he called on me, in consequence of a tubercle lodged in the substance of the cheek, at the anterior edge of the masseter muscle, corresponding to the anterior extremity of the incision. This little mass has remained stationary ever since. It may have been developed in the extremity of the duct, however, as *it neither* incommodes him, nor grows, I have not thought proper to remove it, an expedient which can be easily accomplished if necessary. The left side of his face continues paralysed.—Editor.

GLEANINGS FROM FOREIGN JOURNALS.

Memoir of a case of Blue Discoloration of the Skin, caused by an alteration of the Perspiration. By Dr. C. Billard, *of Angers.*

Victoire Russard, æt. 16 years, was brought to me by M. Hervé, physician at Villevêque, for the purpose of obtaining my opinion upon her case. She was large for her age, and her visage, neck, and superior portion of her thorax presented a blue discoloration. When these places were touched with a white piece of linen they became tinged blue, and the skin lost its hue. The lips were vermillion, the pulse regular and natural, the strength and appetite good. The only morbid symptom was a dry cough, but without any derangement of the heart or lungs being indicated either by percussion or auscultation. This girl had menstruated regularly since her tenth year. For two years she had been employed as a seamstress, during which time she had perceived that her eyes at times were blue. This phenomenon, however, disappeared upon her going into the open air. It was reproduced whenever her smoothing-iron was heated too much, or when she worked in a small hot room.

This discoloration made no further progress till May last, when her forehead and face became so blue as to attract general attention. The dry cough of which I have spoken then appeared, the menses became very abundant, and she had some expectoration, together with vomiting of blood. The menstrual periods were regular. She was bled several times, and had a blister applied to her arm, but without experiencing any relief.

When I first saw this girl I thought that the discoloration was entirely independent of any organic disease of the heart, and as the blue matter was secreted from the surface of the skin which was colorless when it was wiped off, I supposed that it was caused by an alteration of the cutaneous secretions. This diagnosis being established I found myself entirely at a loss to determine what were the indications to be fulfilled. Nevertheless, I advised the physician to use such medicines as acted directly upon the skin, by which perhaps its morbid actions might be changed. For this purpose six grains of the flowers of sulphur and a decoction of half an ounce of the root of sarsaparilla in a pint of water, were ordered to be taken every day.

So far was this treatment, which was followed for twelve days, from doing any good, that it caused an abundant perspiration, a sensible diminution of the urine, together with a great augmentation of the blue color of the skin. The forehead, the face, the neck, the thorax, and the abdomen became of an azure blue color, the intensity of which was increased according to the activity of the sub-cutaneous circulation, so that when she was at all agitated she turned blue instead of red. It was remarkable that the anterior part of the face and body, as well as the arms, the shoulders, and the thighs were thus colored whilst the posterior part of the body, the axillæ and the hams were in a normal state. The linen of the patient was stained blue. The sclerotica, the nails, the skin of the cranium, and the conchæ of the ears preserved their ordinary color. The mucous membrane of the mouth was a little pale, the tongue furred, but no febrile symptoms could be discovered.

I saw the patient five days after the first consultation, when she presented the appearances which I have described. The cough was more violent—she was without fever—but for six days she suffered from suppression of urine. At this time the coloring matter became more abundant, and every night she had copious sweats, so that the cutaneous transpiration appeared to take the place of the urinary secretion. For several days she experienced some spitting of blood, for which she had been bled. There were no unusual appearances in the blood.

I collected a considerable quantity of the blue coloring matter from the skin, which was submitted to the examination of a distinguished chemist, with the following results:—

Alcohol at 36 degrees easily dissolved it. Sulphuric ether acted upon it with much facility. Evaporated at the ordinary temperature, it left a residuum of a more or less intensity of color. The weaker acids appeared to have but little action upon the linen stained with the cutaneous transpiration. Concentrated hydrocloric acid produced in it no change. Concentrated nitric acid destroyed its color. Many other experiments were made which it is useless here to particularise. They were all, however, insufficient to class this singular production. Nevertheless I have *thought that* I drew from them some valuable therapeutic hints. I saw that of all the agents capable of neutralising this color, a weak alkali was the most innocent, and therefore I ordered the patient to take the bi-carbonate of soda, in an infusion of orange water. Six grains a day were at first taken, then twelve, and at last eighteen. Whether this medicament acted as a diuretic, or exerted *its influence* upon the blue coloring matter, I cannot say; but *certain* it is that the color of the patient sensibly diminished; at the end of twelve days, the skin of the body and limbs had become quite pale, and there only remained a blue tint about the eyes, the nose, and the forehead. The urine was passed more easily and was more abundant, the sweats less copious, the appetite was improved, and the patient stronger and more gay; the cough, however, remained, and from time to time there was some spitting of blood, particularly upon the approach of the menses. As I had observed that the blue matter had been raised from the skin by means of olive oil, I advised the patient to wash herself with it every morning.

During the month which followed this first melioration, the patient became less and less blue. During this time she had taken an ounce of the bi-carbonate of soda, and yet her urine did not show any alkaline properties. The perspiration was less acid than common and not so abundant, but whenever the patient was exposed to a great heat, or experienced any disagreeable impressions, it appeared upon her face, which became more blue than when she was in a state of tranquillity. As the period of menstruation approached, the patient was more than commonly oppressed. If she walked rapidly, the beatings of her heart became more rapid, without intermission or having any *bruissement;* the cough was increased, and she vomited and spat up without effort, black blood as in hematemesis. When the menses were passed and she had thrown up a certain quantity of blood, she became more pale, less oppressed, and her blue color almost left her.

She continues to take the bi-carbonate of soda from time to time. Recently she has been bled from the arm, since which time she has vomited some blood, at the bottom of which the blue coloring matter was found in such large quantities as to discolor the sides of the containing vessel. The same thing was observed in some blood which came from her nose. Unfortunately this substance was not submitted to chemical analysis.

At the present time the subject of this paper is in a very satisfactory state. Her face is but slightly discolored—the body and limbs are no longer so. The forehead and cheeks only turn blue when she is agitated or much fatigued. The discoloration is increased by heat, and its intensity is in direct proportion to the augmentation of the cutaneous transpiration. The pulse is regular, the movements of the heart, when she is calm, are natural, but the urine is still colored and the dry cough remains; the *en bon point* is not diminished, neither is her strength nor appetite.

Conclusion.—This blue discoloration is, I believe, without example in medical science. It is very different from that produced by aneurisms, as it also is from the greenish tinge formed upon the linen by the sweat of certain patients. It appears to me that this malady should be classed amongst those caused by an alteration of the fluids. It is not the effect of an alteration in the pigment of the skin, but is a kind of blue effluescence, for when it is raised from the skin, the latter remains white. It would really, then, seem to be an alteration in the cutaneous secretion.

The relation between this morbid phenomenon and the suppression of the urinary secretion, is explained by the natural sympathy between the cutaneous and renal secretions. It is also by the natural sympathy between the skin and the mucous membranes, that I explain the appearance of the blue matter in the expectorated and the vomited blood, as well as in the blood from the nose. The mucous membrane, as well as the skin, appears to have secreted this substance.

Although this phenomenon of coloration appears to be the effect of an alteration in the perspiration, yet it is equally true that it is supported by some irritating cause, since it is augmented by any thing which irritates the secretory apparatus of the skin, whether it be heat, or a cutaneous congestion caused by some moral sentiment, or the action of a sudorific. It must, however, be acknowledged that this irritation is of a specific kind.

The appearance and disappearance of the blue waves is accounted for by the alternations of secretions and absorption of which the skin is the perpetual seat. The continual variations which the subcutaneous capillary cirsulation undergoes, was the cause of the different degrees of intensity which the colored parts presented.

The cough, the pulmonary congestion, the spitting of blood, the beatings of the heart, were without doubt the concomitants of this discoloration, which the difficulty of sanguification might favor, but could not produce, since we see every day this occurrence in persons who have no discoloration of, nor blue secretion from the skin.

Although this coloring matter was not found in the blood drawn from the arm, yet it was probably contained in it, since it was deposited both upon the surfaces of the integuments and the mucous membranes.

The therapeutic indications were deduced from the observation of the pathological facts and chemical analyses. Thus sudorifics should be avoided, because they augmented the *complaint*; depletion should be had recourse to where there are symptoms of congestion, and an alkali should be administered, since it has the double effect of neutralising the coloring matter and augmenting the urinary secretion.

[*Archives Générale de Médecine, Tome XXVI, Août*, 1831.]

Tuberculous Affection of the Uterus, by M. RAYNAUD.

Amongst the different organs which are liable in the course of phthisis to be affected with tuberculous affections, the uterus appears to have escaped the observation of numerous authors. Bayle, in his *Récherches sur la phthisie pulmonaire*, makes no mention of that anatomical alteration of the uterus which may be called its tuberculous degeneration. M. Andral makes no mention of it in his *Clinique médicale*. In his *Traité d'anatomie pathologique*, the existence of tubercles in the uterus is pointed out. Laennec is silent upon the subject.

M. Louis has related but one single case of this kind. In his work on phthisis, observation 32d, he says, "The cavity of the uterus and the superior half of its neck possessed a yellowish whiteness, with a rough unequal surface, arising from the transformation of its superficial coat into a firm tuberculous substance about a line in thickness. Below this were found miliary granulations of the same nature."

During a residence of six years in the hospitals of Paris, five of which were passed in *la Charité*, during which time I examined an immense number of dead bodies, I met with but one single case of the kind of which we are now speaking. During the last year, I observed in la Pitié, two cases of this tuberculous affection of the uterus, one of which I will state.

Case.—Victorine D...., æt. 39 years, jeweller, entered the hospital de la Pitié. She had menstruated at the age of 12 years, and had been regular till the middle of the year 1829. She was the mother of seven children, and had not experienced any unfavorable occurrences after her accouchement. Until the time of her admission her general health had been good. In the month of August she had some symptoms of pleurisy. There was evidently some effusions into the right side of the thorax. After remaining three months in hospital, the patient left it, but without having recovered her health. She had a continual headache, which had lasted for 15 days, when she was re-admitted on the 3d May, 1830.

She had violent headache, accompanied by irregular shiverings and pain in the limbs. Notwithstanding her illness, she had for the first eight days continued her usual occupation. At the end of that time her appetite had completely left her—her mouth was foul, and she had constant inclination to vomit. Her stools at first scanty, were at last entirely suppressed, and each day she had irregular chills which were not followed by fever. On the next day she had great pain in her head, together with weariness of her limbs. The right cheek was warmer and more red than the left. The rotundity of her form was preserved, tongue white and moist; thirst, bitter taste in mouth, without distaste for food. Her belly was soft and indolent; bowels constipated. Urine diminished in quantity, and could only be passed in a standing posture. Respiration calm, without cough or expectoration. At the superior and posterior part of the right side of the thorax, the respiratory murmur was less distinct than in other places, and the sound less than in the corresponding part of the opposite side. The pulse was natural; skin naturally warm. (*Lavement: catap: sinapisms; blood letting from the foot; diet.*) The blood flowed freely. In the night she felt some inclination to vomit. On the 5th, the pain in the head had diminished, pupils were dilated, general lassitude. Tongue less white and more coated; thirst moderated. Bitterness in the mouth continues, appetite very small. Pain in epigastric. The lavement did not produce any fecal evacuations. Urine passed with much difficulty. There were slight chills and a general feeling of coldness, although the temperature of the skin was unchanged. On the following morning the pain of the head had diminished, her senses were perfect, eyes brilliant, and without lachrymation; pupils dilated and stationary. There was some intolerance of light, together with dimness of vision; hearing perfect. Sense of smell unimpaired, taste deranged, mouth very bitter, tongue dry and red. The dry parts were of a brown color. Great thirst, no appetite, nausea without vomiting. Hypogastrium tender on pressure. Urine clear, hot, and passed with difficulty—respiration unaffected—pulse frequent and strong—*skin* dry and cold—no rigors. During the night she slept but little and was very loquacious.

7th. Continual pain in the front of the head. Pupils dilated and stationary—sight deranged—limbs sore—tongue as on preceding day, but moist and white on the sides, point, and base. Other symptoms unchanged, except the pulse, which is quicker. To the foregoing prescription, with the exception of venesection, leeches behind the ears were added.

8th. During the night the patient was much agitated, but less so than on the preceding days. At the period of my visit she was calm. She made no answer to the questions which were put to her. She uttered some indistinct sounds. At times her features were drawn inwards, and vertical lines were formed on the forehead. The left side of her face was suddenly injected and covered with sweat. The muscles did not loose their power of motion. The eyelids were cast down and slightly closed; the eyes, when they could be seen, were without expression. The left pupil was dilated very much, the right one slightly so—both were completely immoveable. The sight was *apparently gone.* The fore-arms, when they were pinched, caused some contortions of countenance. The lower limbs were insensible, and no impression could be made on them. The parietes of the abdomen were in the same situation, except in the hypogastric region, which was sensible on pressure. The tongue could not be seen without forcing open the mouth—the teeth were fuliginous—the urine was drawn off—the constipation could not be conquered—respiration was not hurried—pulse 80, different in the two arms—sinapisms were applied. The patient could not be heard to complain at all. She died at 2, P. M. on the 8th.

Examination made 43 hours after death. There was no appearance of putrifaction. The exterior vessels of the dura mater were engorged with blood, the superior longitudinal sinus was empty. The brain filled exactly the cavity of the dura mater, its convolutions were depressed and a little dry. There was no infiltration of serum beneath the dura mater, except between the convolutions, where a small quantity was found. The membranes were raised so as to leave untouched the cerebral substance. The brain, upon being cut, appeared a little injected, its gray part was slightly darkened in color. As we approached the centrum ovale of Vieussens, its white substance presented a smooth, moist appearance, and its consistence was less than in a natural state. As we approached the superior parietes of the ventricles, they became more sallient, and evident fluctuation could be felt. When they were opened in such a manner as not to permit the escape of the contained fluid, they were found distended with a great quantity of serosity, which was less transparent than in a natural state. There was no perceptible difference in the capacity of the two lateral ventricles. The interventricular partition was unaltered, and the cerebral substance at this place was softer than in a normal state. The consistence of the corpora striata was slightly diminished. There were several other lesions of the brain, which it is useless to mention here.

Genital Organs.—The vagina being slit in the length of its superior face, a matter resembling softened tubercles mixed with pus escaped from it upon slightly pressing the neck of the uterus. The surface of the vagina was perforated by numerous ulcerations; some larger and some smaller than a bean. The edges were irregular and the bottom red. They were more numerous upon the posterior face of the vagina than upon its sides, and there were none of them upon its anterior border. The parts between the ulcerations were much injected. The uterus was rather more than three inches in height and two and a half in width. Its greatest thickness was about half an inch. Its anterior lip was slightly tumified. Its internal surface was coated with tuberculous matter. The superficial part of this coat was free and could easily be detached, whilst the deeper portion appeared combined with the substance of the uterus itself. This coat was a line in depth, and its thickness was greater upon the posterior than the anterior face of the uterus. It was very unequal, and presented a mammillated appearance. On scraping with a scalpel, the vessels of the uterus could be seen penetrating this coat. In the thick part of the uterus there was found a small crude tubercle, which did not communicate with the internal surface. A tuberculous matter, similar to that contained in the matrix, was found in the cornua, one of which was nearly obliterated and had its extremity open. The ovaries contained several serous cysts.

Digestive Organs. Stomach.—A large quantity of liquid was found in it. There was a thinning, together with complete destruction of some portion of the mucous membrane of its larger extremity. Other portions o this membrane which were in contact with the liquid did not present the same lesions, but were softened. Upon the posterior face there were lines or yellow ridges, which were directed towards the pylorus. The intermediate portions towards the cardia, together with a part of the œsophagus, had a yellow tint, and the mucous membrane was nearly destroyed. There were a number of black lines formed by vessels containing black coagulated blood. The remainder of this membrane was much injected in some places, in others it retained its normal appearance and natural consistence.

There was on some parts of this organ a bloody mucous, and suspended in the liquid were seen numerous grains of a black matter resembling fine tobacco.

Small Intestine.—Towards its middle and near its termination were two ulcers, with salient edges. At the bottom of one, the submucous cellular tissue was thickened and grayish. The peritoneum at the corresponding point was studded with tuberculous grains, and surrounded by a radiated injection. The papillæ in the neighborhood of this ulceration were well developed and very projecting; some of them were white at their summits, and appeared of a tuberculous nature.

Large Intestine.—There was nothing remarkable here. Numerous grayish plates formed by crude tuberculous matter were found in the mesentery. Upon the portion of that membrane which covered the body of the uterus, were seen a number of serous membranes floating under water, having the appearance of small vesicles.

The liver and kidneys were in a natural state. The spleen was very large. Upon its exterior surface there was a cartilaginous substance as large as a franc piece.

Lungs.—Ancient adhesions united the lungs to the parietes of the thorax. There were numerous tubercles found at their superior portions, particularly in the lung of the left side, and there was a well-marked contraction of the pleura at that point. Some of the bronchial tubes were obliterated.

Observations.—The uterus, as we have seen, was more voluminous than common. There could be no doubt as to the nature of the tuberculous matter which was found in its interior, and that it was identical with that which was the best characterised. It formed, as we have said, two coats on the interior of the organ, one free and easily detached, the other adhering to its proper tissue. The first could only be considered as a secretion from the internal surface of the uterus, whilst the second appeared evidently to result from a transformation of the proper tissue of this organ into a tuberculous matter. This seems proved by the presence of blood vessels existing in several parts of this coat.

The slightly gray and transparent appearance of that part of the uterus situated below this coat, might perhaps be considered as indicating the first degree of tuberculous transformation; and here, as well as in the lung, the grayish and semi-transparent state may have preceded the yellow and opaque. It is worthy of remark that this morbid state of the uterus did not take place without a corresponding developement of the vital power peculiar to its substance.

The interior of the uterine cornua presented the same alteration as the uterus itself, but the origin of the tuberculous matter which they contained, was more evident. The quantity was so great that they were distended to five times their natural size.

The state of the vagina should not pass unnoticed. It is very uncommon to find this canal the seat of ulceration, except in syphilis and uterine cancer, and in the first of these cases it exists generally near the vulva, and in the second it is owing to the extension of the cancerous affection which has first been developed in the neck of the uterus. The ulcerations were here extremely numerous, and were more behind than at the sides, whilst in front and at the top there were none.

Should not these facts, which constitute a true uterine phthisis, have produced during life some of their proper symptoms? Every thing seemed to indicate that an abundant effusion from the vulva must have taken place, but I could not ascertain the fact.

In the foregoing account we have demonstrated the existence of an organic affection of the uterus, resembling that which is every day met with in the intestines and lungs. Time alone can enable us to determine the causes and the consequences of this rare complication of phthisis pulmonalis. I believe that the attention which will be called to this disease will result in many interesting discoveries.

[*Archives Générales de Médecine, Août*, 1831.]

Successful Removal of a Tumor of the Scrotum, weighing 110 lbs., by M. Clot, *Inspector of the Army Medical Department of the Pacha of Egypt.*

Agi Assan, æt. 40, was born at Benlkelp, Upper Egypt, of strong constitution and lively disposition. His mother labored under elephantiasis of the legs. He led a wandering life, begging and selling amulets through Egypt. He states that at twenty-five years of age, a swelling of the scrotum supervened spontaneously, and without known cause. He had been attacked several times previously with venereal affections, for which he had received no medical treatment, as is the usual custom with the Arabs, in whom syphilitic symptoms frequently disappear without medical interference. The swelling at first was painful, but then became indolent, and increased very slowly, now and then, however, assuming an acute character, accompanied with fever and vomiting. This state usually lasted a few days, and at each accession the size of the tumor became increased. In the lapse of fifteen years it attained nearly the size of a fœtus at the full time. During this period he had two children. After that the disease made much more rapid progress, and in the space of the twelve ensuing years, (up to the present time,) the swelling acquired the developement I proceed to describe.

The form and volume of the tumor were so singular, that it seemed as if Agi Assan had placed a large wine bag between his thighs. No traces of the genital organs were perceptible to sight or touch; the weight of the swelling obliged him to remain constantly seated on the ground. When standing up, he was necessitated to keep his limbs widely separated, and in this position the tumor could be moved neither forwards nor backwards; it touched the ground, and the patient could set on it as if on a chair; but this attitude could not be long preserved. It was 23 inches long, its transverse diameter 19, and its antero-posterior depth 10 inches. Its anterior surface was divided nearly in the centre by two deep and oblique furrows, by which the tumor was apparently separated into two distinct parts. The skin covering the superior portion was of a dark gray color, marked also with deep oblique furrows, leaving in their intervening spaces ragged swellings of various forms. The inferior part was rounded and more voluminous, its skin smoother, its tint of a clear gray, and exhibiting in its centre a longitudinal furrow, apparently indicating the course of the raphe. In the centre of this second portion there was a projection, two inches long, by one wide, on the left of which was situated the orifice, through which the urine was discharged. To the right were some ulcerated spots, and here only was pain experienced. The posterior surface was of a darker color, the skin hard and resisting, and inferior in sensibility and heat to the rest of the surface of the body.

The tumor was fixed to the pubis and perineum by a large isthmus nearly two feet in circumference, formed by the skin of the pubis, groins, perineum, and the inferior parts of the nates. It was covered with varicose veins, and its skin was of a more natural state than that of the other parts of the swelling.

It was quite easy to ascertain that the swelling contained none of the pelvic viscera. From every indication it was likely that the testicles were not essentially diseased. There were no symptoms of sarcocele. The general health of the patient was good, and his moral feelings perfectly favorable for undergoing an operation to which he was fully determined to submit.

Unwilling to perform it without a consultation, I called together the army and hospital surgeons of Alexandria. I also requested the attendance of M. Pariset, and of the surgeons of the French vessels stationed in the harbor. The consultation decided that the operation afforded the only chance of saving the life of the patient, whose existence was rendered miserable, and could not be of long duration, if his malady were abandoned to a natural course. On the same day, therefore, at 10, P. M., the operation was performed, in the following manner.

The patient was placed on a bed, the buttocks elevated, and the thighs and legs held wide apart; standing at his right side, I formed upon the anterior part of the isthmus, a flap of integuments four inches wide by five long, (which I intended as a covering for the penis,) by means of two perpendicular incisions directed from the fold of the groin downwards, and connected inferiorly by a transverse incision. By two curved incisions, directed on each side from the top of the perpendicular ribs, and turning round the isthmus to its posterior part, I found also two other flaps, of rather more than a semi-elliptical shape, for the purpose of serving as an artificial scrotum, in case the testicles should be found healthy. In the dissection of these flaps, I divided a great number of vessels, some arterial, but principally venous, which I tied at once. The flaps having been dissected up, I proceeded to seek the penis, and this I readily arrived at, by introducing a straight catheter into the opening through which the urine escaped. By cutting down on the end of the sound, the glans was discovered, and by following the course of the sound, the canal was protected from injury till we arrived at the spermatic chords, which were freed by two oblique sections, directed from without inwards, and above downwards. The chords were now found to be much swollen, at least three times more than the natural size, and from ten to eleven inches long. By following their extent I arrived at the testicles. The right was swimming in seven or eight ounces of serum contained in the tunica vaginalis; the left did not present this peculiarity. They were not longer than natural. The swelling and excessive length of the chords, however, having appeared to me such as to preclude the possibility of preserving his testicles, I placed a ligature round each chord, and divided them within two fingers' breadth of the ring. I then hastened to detach the tumor without delaying to tie the vessels, after which there were but few branches to be secured. I brought the integuments over the penis and perineum, united them with a few points of suture, and supported the entire with a T bandage. The operation was finished in 22 minutes. The patient endured it with admirable courage. Towards its conclusion syncope supervened for a few seconds, for which he was immediately placed on the bed, and a few spoons full of an etherial mixture administered. He quickly recovered, and asked for a pipe and a cup of coffee, with which he was indulged. He all along preserved the fullest confidence in the success of the operation.

Two hours after the operation, the patient complained of pain in the perineum, and felt a strong desire to pass water, but could not succeed in passing a single drop. I introduced a gum elastic sound, by which about a pint of urine was drawn off. The patient's distress still, however, continued, which presuming to depend upon a sympathetic irritation of the neck of the bladder, I administered an anodyne draught. This succeeded in tranquillizing the patient and making him incline to sleep. He was then placed on absolute diet and flax seed infusion.

Four, P. M. Pain ceased, skin hot, pulse stronger, but less frequent.

28. *Morning.* Disturbed night, sleep broken by dreams; pulse frequent; tongue moist; he refuses tisan, and will only drink plain water. The dressings soaked in profuse exudation.

Evening. Calmer than before; allowed an orange.

29. *Morning.* Night tranquil; slept well for three hours; lips of the wound adhering in some points.

30. *Morning.* Slept well; pulse less frequent; tongue moist; dressing renewed; the wound less puffy and cleaner than before. In the evening there was a slight exacerbation.

31. Slept well for several hours. From this period he gradually, though slowly, improved; the wound undergoing the process of suppuration till the middle of June, when his cure was complete. His convalescence was considerably retarded by the ligatures of the spermatic chords producing suppuration in the groin, and remaining in the wound in spite of all attempts at their removal, till a very short period before the completion of the cure.

Pathological Examination of the Tumor.

Immediately after the operation, I proceeded to the examination of the tumor, in presence of the consulting surgeons. It weighed one hundred and ten pounds, not including a considerable quantity of serum, which escaped during and after the operation. The skin was lardaceous, hard, and much thickened, lobular, infiltrated with yellowish serum, and overspread with a net-work of blood vessels.

The centre of the tumor was formed of a yellowish, hard substance, of fibrous consistence, and creaking beneath the cutting instrument. The chords and epididymis were swollen; the connecting cellular tissue infiltrated with serum; the chords were nine inches long; the testicles of natural size and healthy structure, The canal which led from the end of the penis to the external surface of the tumor, was eight inches long, and of the calibre of a large sound. It seemed to have been formed by the skin of the penis, distended and returned on itself.

[*London Lancet.*]

Essay on Asphyxia; or an attempt to Illustrate the Pathology and to Simplify the Treatment of Suspended Animation. By JOHN THOMAS, *Surgeon to the Dispensary, Well-Street, Hackney.*

Asphyxia is a term compounded of two Greek words, α, privative, and σφυξις, a pulse; and is applied to that condition of the body in which the pulsations of the heart and arteries are so feeble as to be quite imperceptible to the touch. This may be considered as the etymological import of the term, and as such perfectly correct; but for practical purposes a more physiological definition is requisite.

Different illustrations of asphyxia have been given by authors, but all seem to agree in this, that the suspension of the signs of life is referable to the interruption of the reciprocal actions which naturally exist between the heart, lungs, and brain, caused by some external violence.

"When any cause," says Mayo, "prevents the introduction of atmospheric air containing oxygen into the lungs, the blood is returned unchanged to the left side of the heart, venous instead of arterial blood is sent into the brain, and consciousness is suspended. This state is termed asphyxia."

"The term asphyxia," says Gregory, "is commonly appropriated to those cases in which animation is for a time suspended from some violent cause impeding respiration, such as strangulation, drowning, or exposure to mephitic gases."

"The term asphyxia," says Richerand, "is applied to any kind of apparent death, occasioned by an external cause, and suspending respiration, as submersion, strangulation, the diminution of oxygen in the air inhaled, &c."

The vital functions distinguishable in the animal system, are ordinarily divided into two important classes; namely, into the organic and animal. The organic functions are common to plants and animals, and have therefore been denominated vegetative; and the animal are peculiar to the economy of all living beings possessing a brain and nerves, or ganglionic system, from the polypus to man—from the first link of the chain of the animal creation to the last—hence it has been termed, the class of sensitive functions, or *animal life*.

To organic life, therefore, belong the properties of circulation, respiration, absorption, nutrition, &c.; and to animal or sensitive life those of perception, reflection, voluntary motion, &c.

Organic and animal life are dependent upon the healthy stimulus of arterial blood. So long as this fluid is duly conveyed through the organs of the body, they act according to the physical impressions to which they are ordinarily accustomed, and they continue to develope those manifestations for which they are appointed. Thus the urinary organs in their operations separate the urine from the blood; the liver secretes the bile; the heart propels the blood into its proper channels; and the brain displays the phenomena of the mysterious operations of the mind. But, on the contrary, if the blood from any cause become deteriorated, the most formidable symptoms then arise, *their urgency depending upon the degree or continuance of the deterioration*. Wherefore it is apparent how dependent both organic and animal life are upon a healthy circulation for existence and support. But the circulation cannot be long maintained, if the access of the vital fluid to the air be prevented. If a cause operate to produce such an obstruction, the speedy result is the suspension of animal life. The individual thus affected becomes incapable of voluntary motion—all sensation is obliterated, and the inlets of knowledge consequently *closed*: he is in a state of apparent death, in short, he is asphyxiated. If the cause of these phenomena continue, organic life gradually diminishes in force, and at length entirely ceases; and the body is removed beyond the possibility of resuscitation—it is pathologically and really dead. Hence death may be either real or apparent; the latter may run into the former, but the state wherein vitality is actually extinct, can never, by any human power, be restored to that of apparent loss of life. Death too may be either chronic in its approach or sudden; when chronic, it is the result either of disease or natural decay, and when sudden, of accident, or of some unassignable cause.

The substratum of almost all logical investigations concerning suspended animation, exists in the reciprocal relations and connexions of the heart, the lungs, and the brain, and the division, consequent upon these, of the phenomena of vitality from those of organic and animal life.

"Among the organs," says Richerand, "whether single or combined in systems, which enter into the human organization, there are some whose actions are so essential to life, that with the cessation of that action life becomes extinct. These primary systems, whose action regulates that of all secondary systems, are as numerous in man as in the other warm-blooded animals. *None* *of them can act unless the heart sends into the brain a certain quantity of blood vivified by the contact of atmospheric air in the pulmonary tissue.* Every serious wound of the brain or heart, every lasting interruption to the access of blood into the former of these organs, is invariably attended with death. The oxidation of the blood, and its distribution into all the organs, are consequently the principal phenomenon upon which the life of man depends.

Neither the heart, nor the lungs, nor the brain, can suffer lesion without the functions of one and all of them being seriously disordered. If the heart's action be diminished, the sensitive phenomena are depressed; if obstructed, consciousness is suspended. If, by any cause operating upon the nervous system, such as depressing passions, the energy of the brain be subdued, the action of the heart is restrained in a corresponding ratio; if excited, the velocity of the circulation is proportionably increased. And, lastly, if respiration be interrupted by the exclusion of air from the lungs, the action both of the heart and brain become slower and still more slow, till at length they are totally destroyed.

Thus we perceive that the heart, which is the centre of circulation, and that the brain, which is the centre of sensation, are mutually dependent; and that these two important organs are connected in a manner quite indispensable for the performance of their functions by the lungs. The brain, to speak figuratively, is the president of the human economy. It is maintained in its connexion with the heart and lungs by means of its internuncii, the nerves. One of these, the pneumo gastric, unites the glottis, the heart, the lungs, and the stomach, to the brain—what, therefore, affects this organ, more or less influences these parts. Again, it is connected with the heart by the venous and arterial systems, which also link the organs of respiration to the heart and brain. And, lastly, the heart, the lungs, and the brain, are importantly related by the circulation of the venous and arterial blood.

Blood is the natural stimulus of the organs through which it flows—it nourishes the tissues of the body, and is the material upon which all organic operations take place in the elimination of the different secretions. There are two kinds of blood which are distinguished by the appellation of *venous* and *arterial*, according as it may be found in the veins or arteries. But this is a secondary distinction, compared with the essential dissimilarity there is between the properties of each. Venous blood is eminently destructive of both organic and animal life, but arterial blood is highly conducive to its support and continuance. All blood, however, is primarily venous,* and it is from this that the arterial is formed; a laboratory, therefore, (to borrow a simile from the chemists,) is provided, where the venous blood is submitted to a chemical and vitalizing process; this laboratory is the lungs. All the blood is brought by innumerable tubes to the right side of the heart, or, as some term it, to the venous heart, by the contractile power of which it is conveyed to the lungs. It arrives here loaded with chyle and carbon, and of a deep purple color. The grand function of respiration is to maintain a continual supply of fresh air, by means of which the lungs may deprive the venous blood of its deleterious carbon, and thus transmute it from a poisonous into a life-exciting fluid, which is re-conveyed to the left or arterial heart, and by it expelled into the arteries to be distributed to all parts of the system. But if the access of atmospheric air to the lungs be prevented, the vitalization of blood is obstructed, and it is returned to the arterial heart totally unfit for circulation. This carbonized blood is carried by the arteries into the brain and other organs, whose action in consequence declines, the manifestation of the mind ceases, and animation is suspended. The suspension of cerebral action accelerates the extinction of all organic phenomena, and the individual becomes to all intents and purposes dead.

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* This remark applies to the animal that maintains its existence independ-

The cause which interrupts respiratory action may act either upon the heart, the lungs, or the brain, singly and consecutively, or upon the heart and brain simultaneously. When it operates upon the air-passages, the glottis, or aperture of the larynx, is the locum lædentis. When the chest dilates, the air rushes through the chink of the glottis into the lungs. During this ingress the aperture of the glottis expands, alternately dilating and contracting, according as the action may be inspiratory or expiratory. These alternations, however, occur only where respirable air is respired, for if any noxious or foreign bodies attempt a passage, contraction instantly takes place, and continues till either the aggressor is removed or life has ceased.

Carbonic acid gas, nitrogen, &c., submersion, strangulation, &c., are among the causes which prevent respiration, by producing constriction of the glottis. If, therefore, this cause continue operative, asphyxia speedily follows; the blood is no longer vitalized; it circulates through the brain; animal life is soon suspended, and organic life shortly after becomes extinct. The intensity of the constriction is according to the violence of the cause.

I have said that the blood in the lungs is converted from venous, or purple, to arterial, or scarlet. As I am writing not merely for

ent of maternal sustenance; the fœtus, I presume, being built up by arterial blood derived from the mother, may be considered as deriving its venous fluid from that source. This is, perhaps, a metaphysical inquiry.

medical men, but also for those humane individuals whom accident may call into the relief of asphyxiated persons, some little account of the changes which take place in the constituents of the blood and air, may be neither inappropriate nor unacceptable.

The process is both chemical and vital; that it is chemical we know by the products, and that it is vital we also know by the fact, that if the lungs be deprived of their vitality, no operation whatever is carried on. The air which we respire is composed of 79 parts of nitrogen, or azote, and 21 of oxygen, or vital air, in 100 parts of atmospheric air. In 1000 parts there is about one part of carbonic acid; thus the oxygen is as one to four of azote, and in this proportion we can breathe the gaseous mixture for years with impunity. But were the proportion of oxygen doubled, "the temperate breath of heaven would be changed into an intoxicating gas," or were it diminished, "breathing would be laborious, and every warm-blooded animal would become asthmatic." This mild and agreeable compound then is the air we breathe. By the mechanical powers of respiration it is inhaled and exhaled. In the interval between inspiration and expiration, certain chemical decompositions ensue; the oxygen of the air combines with the carbon of the blood, and carbonic acid gas is formed. In consequence of this deprivation of carbon the blood is changed from purple to scarlet, and acquires all the properties necessary for the support of vitality; the air becomes deteriorated and rendered unfit for respiration; the measure of oxygen it has lost is supplied by the new product, carbonic acid, which is exhaled for the purpose of being replaced by a fresh quantity of oxygen. *The breath*, therefore, is an air compounded of oxygen and nitrogen, with a large proportion of carbonic acid gas, and holding in solution aqueous vapour. Respired air is extremely unfit for respiration, in consequence of the excess of carbonic acid it contains; *and hence it must be evident to every one how exceedingly detrimental artificial respiration must be, when the breath of another person is made the basis of the operation.* It is a desideratum, therefore, to substitute for the breath, or even the atmospheric air, some gas whose properties are more stimulating and life-exciting, for it must be remembered, that in cases of asphyxia the vital energy is extraordinarily depressed, in consequence of the circulation of venous blood. An extraordinary stimulus, therefore, should be sought for and employed, to counteract the urgent depression, and to restore vitality to its wonted equilibrium. May we not find in oxygen the desired substitute? "*The qualities of the air must be suited to the condition of the vital power in the lungs.*" In asphyxia the vital power is depressed, the indication, therefore, is to raise it: this can be fulfilled only by the exhibition of such agents as are known to have that power of excitation.

"No remarkable difference is at first perceived in the act of respiration, but if the animal remains long immersed in a vessel of oxygen gas, his respiration becomes more frequent, his circulation more rapid, and all the vital functions are executed with more energy." But if he were put into a jar of atmospheric air he would speedily consume the oxygen, and substitute for it his own breath, loaded with carbonic acid; his breathing would become laborious and panting, and ultimately asphyxia or suffocation would ensue.

Now if we desired to resuscitate this animal, it is evident that inflating his lungs with respired air would be only adding injury to injury. Our manifest indication would be *to supply the lungs with oxygen*, not merely in the form of atmospheric air, *but pure;* and we may reasonably expect, if there be a spark of vitality left, that recovery will be effected. "These organs," says Richerand, speaking of the lungs, "should not be considered as mere chemical receivers; they act on the air, and combine it with the blood by a power which is peculiar to them; if it were otherwise, there would be nothing to prevent a dead body being restored to life by inflating with oxygen the pulmonary tissue." I repeat, therefore, that it is my belief, *if organic life be not irrecoverably extinguished, that both it and animal life may be restored to their wonted equilibrium, by inflating the lungs of the asphyxiated with pure oxygen.*

"Respiration, which is completely under the influence of the brain as far as relates to its mechanism, is less dependent upon it in regard to the action of the lungs upon the blood, and the combination of that fluid with oxygen which is the essential object of that function. The nerves, however, have some influence on that function, as well as on the various secretions in which, according to Bordeau, they are of first-rate importance. M. Dupuytren ascertained by his experiments, that the division of the cervical portion of the eighth pair of nerves did not sensibly affect respiration, but the animal died, with all the symptoms of asphyxia when this nerve was divided on both sides. By interrupting the communication between the lungs and the brain, we paralyse the former of these organs, and it ceases to convert the venous into arterial blood. It is easy to conceive that all organs, for want of this stimulus which determines their action, carry on their functions imperfectly, and at last cease to act. The brain, therefore, possesses a double influence over the function of respiration; on the one hand it directs its mechanism, and on the other it is through the nerves which arise from the brain that the lungs have the power of converting dark blood into arterial blood, which is the principal phenomenon of respiration.'

These are opinions which the experiments of Gallois seem to render somewhat questionable. After having induced asphyxia in a guinea-pig, by tying the pneumogastric nerves on both sides, he restored the animal to life and motion by the tracheotomic operation. The scarlet blood which became purple the instant the nerves were bisected, recovered its arterial character after the renewal of respiration, and the animal lived several days after the experiment. Now it is probable, in this case, that the section of the nerves caused a constriction of the glottis, so complete as effectually to prevent the ingress of air into the lungs, in default of which arterialization instantly stopped, and deterioration commenced; for, as soon as oxygen entered the lungs, the healthy vital functions were restored. May not the par vagum be considered rather as a nexus, by which important organs are constantly united with the respiratory apparatus, especially the glottis and parts adjacent, which have sent to them two superior and two inferior laryngeal nerves, that the inspiratory diastole, and the watchful sensibility of the glottis, may be regulated and determined.

It was demonstratively proved by Bichat, that in genuine asphyxia the heart continues to act, although respiration has ceased. He ascertained that the arterial heart propelled purple blood over the whole system, and that when a few pulsations had conveyed a small proportion of venous blood into the brain, insensibility supervened, and animal life ceased; and that at length, purple blood having circulated through the coronary arteries, the action of the heart was destroyed, and also every other contractile tissue through which it flowed. Hence the complete extinction of life by pure asphyxia is to be accounted for, by the purple and unarterialized blood acting as a poison, first upon the nervous system, causing a suspension of animal life, and secondly, upon the muscular inducing a cessation of organic life.

The length of time has not been determined during which animal life may be suspended, and yet restored; Mr. Mayo thinks it does not much exceed four or five minutes. "About this time," says he, "life may be considered as irrecoverably gone, not merely in consequence of the continued suspension of the energy of the brain, but because the heart appears to lose its irritability when florid blood is not circulating through its vessels."

Cases are adduced in which asphyxiated persons have recovered after a lapse of half an hour; but the testimony upon which they rest is too vague to admit of their reception as data. Dr. Davy states, that he could not recover dogs, even by artificial respiration, when they had been submersed but for two minutes. The divers of Ceylon cannot remain under water a whole minute; the supposition, therefore, is reasonable, that after the cessation of respiration during three, or at most four minutes, both organic and animal life are irrecoverably extinct.

In the *Journal de Physique*, xxviii, p. 418, it is related of

Pilatre de Rosier, that he descended into a brewer's vat while full of irrespirable air, carbonic gas, evolved by the process of fermentation then going on. He experienced a gentle heat in all parts of his body, which occasioned sensible perspiration. He was frequently obliged to shut his eyes, in consequence of a slight itching sensation; when he attempted to respire, a powerful sense of suffocation prevented him; he endeavored to get out of the tub, but missing the ladder he fell, the dyspnœa augmented, giddiness ensued, and he felt a tingling sensation in his ears. When he arrived at the atmospheric air he respired freely, but for some time he was unable to discern the objects by which he was *surrounded*; his countenance was livid, his limbs were feeble, and his comprehension difficnlt; these symptoms, however, soon left him. Symptoms very analogous to these supervened in an experiment instituted by Messrs. Allen and Pepys; they caused the same 300 cubic inches of atmospheric air to be inhaled and exhaled from eight to ten times; in consequence of which the individual became insensible. "Lavoisier found," says Mayo, "that by repeatedly withdrawing an animal and reviving it, it might be made to consume nearly all the oxygen of a given quantity of atmospheric air before death. Otherwise birds die before two-thirds, and *mice* before three-fourths of the oxygen of the air is destroyed."

Asphyxia, in its most extended signification, is a term which comprehends all cases of sudden death, whether *originating from* the lungs, the heart, the brain, or from the synchronous extinction of animal and organic life. The causes which may produce a suspension of animation are very various. But in this Essay the author will consider these cases of asphyxia only which arise from Drowning, Strangulation, the Respiration of Gases *unfit for* the maintenance of life, Lightening, and Exposure *to intense cold*.

1. *Of drowning.*

When a person falls into water, or into any other fluid, and remains there a few seconds, insensibility ensues, and he is said to be drowned. The phenomena of drowning are easy of comprehension, and analogous to those of suffocation generally. The agent acting is the fluid, and the part acted upon is the glottis. The water, which is of course irrespirable, endeavors to pass the opening of the glottis into the lungs; but the glottis like a watchful sentinel, refuses admission to the foreign body and closes spasmodically. In consequence of this constriction, the ingress of atmospheric air is interrupted; and, as we have seen from the experiment of Gallois, the process of change upon the blood instantly stops. The blood, therefore, in the lungs is returned to the left side of the heart, in an unarterialised condition. This purple fluid, as proved by Bichat, after flowing for a few seconds into the brain, causes a suspension of sensibility, consciousness, and voluntary motion. Dark blood continues to circulate through the organs of the body, and the contractility of all parts gradually diminishes and ultimately ceases.

The air passages, after fatal drowning, are found to contain a small quantity of frothy fluid; this fluid is supposed to be water mixed with air, which has insinuated itself during the struggles which precede asphyxia.

"If the body," says Richerand, "remain long under water, *the spasmodic state of the glottis* ceases, water passes into the trachea and fills the lungs. The anatomical examination of a drowned body shows the lungs collapsed, and in the state of expiration; the right cavities of the heart, the venous trunks which terminate in them, and generally, all the veins, are gorged with blood, whilst the left cavities and the arteries are almost entirely empty."

This state of venous congestion occasions that purple appearance of the skin and conjunctivæ so observable in these cases. The delicate membranes of the brain are also much injected with venous blood.

The congestion of venous blood in the internal parts is considerably augmentend by the low temperature of the water at the time of submersion. Whenever the blood is repelled from the surface of the body, it accumulates internally, and the circulation becomes retarded and the organs oppressed. Experiments have been performed upon animals, by which it has been shown, that when they were immersed in freezing mixtures up to their mouths, they soon died, although during the time they respired freely. Thus low temperature appears to combine its influence with the interception of the air *by the constriction of the glottis*, in producing a congestion of venous blood about the internal organs.

2. *Of strangulation.*

When respiration is prevented by immersion in fluids, the person is said to be drowned; when by bodies of greater consistence, as mud, or vapours, he is said to be suffocated, and when by the constriction of a ligature around the throat, as in hanging, or death by the bow-string, he is said to be strangled. Strangulation may be considered as an experiment illustrative of the mode in which suffocation and drowning take place. Thus in these two states the glottis becomes *spasmodically constricted*, but in asphyxia, by strangling, the glottis is *artificially* constringed. The mode in which the glottis is constricted, is, in a certain sense, inconsequential: the effect is uniform, namely, the exclusion of air.

It has been supposed, that asphyxia from strangulation was the immediate effect of apoplexy, because there are redness and lividity of the countenance. The following facts, however, present this doctrine in its proper light.

In France, Gregory opened the trachea of a dog, and passed a noose round his neck above the wound. The animal, though hanged, continued to live and to breathe; the air entered, and came out alternately at the small opening; but when the string was applied below the wound, the dog died.

Richerand relates, that a respectable surgeon in the Austrian service, told him that he had saved the life of a soldier, by performing the operation of laryngotomy upon him a few hours before his execution.

Asphyxia may come on in persons who are hanged, from the luxation of the cervical vertebræ, and from injury done to the spinal chord consequent upon the pressure of the dislocated bones. Louis of Paris ascertained, that of the two executioners of Lyons and Paris, the one despatched the criminals he executed by dislocating the head at its articulation with the neck, while the other destroyed them by inducing asphyxia.

3. *The respiration of gases unfit for the maintenance of life.*

All gases are of two kinds in relation to the respiratory organs —they are either respirable or irrespirable. To the former class belong oxygen, nitrous oxide, atmospheric air, &c., and to the latter, nitrogen, carbonic acid gas, carburetted, sulphuretted, phosphuretted, hydrogen, &c., and various other noxious vapours arising from bilge water, privies, marshes, stagnant pools, &c., the composition of which is as yet not perfectly understood.

It is a contradiction in terms to say, we breathe irrespirable gases; the expression, therefore, "the respiration of gases unfit for the maintenance of life," is incorrect, and involves a doctrine that can be supported neither by hypothesis nor experience.

The act of respiration comprehends two processes—the one of inspiration, the other of expiration. Now if a gas be respired, it must pass through the glottis, the trachea, and the bronchi, into the air-cells, and be again expelled thence into the surrounding medium; but this, an irrespirable gas cannot do. All gases, as I conceive, which are unfit for respiration, are stopped short in their progress at the glottis, which, like the pylorus, refuses to allow any thing to pass which is unfit, or likely to prove injurious to the delicate tissues within. Constriction, therefore, of the glottis, prevents the passage of air into the lungs, as effectually in the case of exposure to the influence of carbonic acid gas, or nitrogen, as though that constriction were caused by a cord tied tightly round the throat.

The irrespirable gases may be divided into those which bring on asphyxia merely, by obstructing the ingress of vital air to the lungs, which is necessary to the support of life,—and into those which destroy vitality by their specific influence upon the nervous and muscular systems.

Among the former of these classes may be mentioned carbonic acid. In asphyxia, induced by this gas, which is the most frequent of occurrence, the fluidity of the blood is preserved, the flexibility of the limbs continues, and the body retains its natural degree of heat for several hours after death. This circumstance is accounted for from the fact, that this kind of asphyxia almost always occurs in situations of considerable temperature, several degrees of which caloric the body absorbs, not that it is a property of our bodies to imbibe heat from the encircling medium, for they resist it; but the vital power being suspended, the power of resistance is diminished, and the asphyxiated body maintains its ordinary warmth. In asphyxia occasioned by this gas, as well as in that from drowning and strangulation, the lungs remain uninjured, and the heart and venous system are gorged with purple, but fluid blood. In the asphyxia occasioned by gases, which kill by their specific influence upon the nervous and muscular systems, there are often found dark and gangrenous spots in the lungs, and death appears to be the effect of a subtle poison, which is the more active, as its minutely-divided and gaseous particles are more insinuating, and affect throughout its extent the sensible surface of the pulmonic portion of the gastro-pulmonary mucous membrane.

So refined is the subtlety of many vapors, that, in some cases, asphyxia is brought on by smelling. Here the impression is conveyed to the brain immediately by the olfactory nerves. In this instance, the functions of the brain cease before those of respiration; consciousness fails first, and breathing, which is an action dependent upon sensibility, if the suspension of animation continue sufficiently long, ceases next. The only difference between death from intercepted breathing, and death resulting from primary impressions on the brain, is, that in the first instance the distribution of purple blood through the system is the occasion of suspended animation, whereas in the latter, the suspension of the energy of the brain is the cause of the circulation of unvitalized blood through the organs.

Agreeable or disagreeable odors produce syncope upon this principle. In Italy, it is said, so susceptible are the native females, that even the smell of a rose will cause them to faint; a fact which has originated the phrase,

"To die of a rose in aromatic pain."

4. *Of death from lightning.*

Death by lightning can scarcely be considered as suspended animation, for both organic and animal life are instantaneously and synchronously extinguished.

Experiments upon the muscles of animals show, that the electric fluid, when passed through, produces violent spasms and convulsive throes. If the living body be subjected to its influence, the intensity of the shock will be according to the accumulation of electric fluid; and those who have been electrified, know well that a very small charge will produce a violent concussion.

In the Isle of Fetlar, the lightning rent asunder, and carried by its impulsive energy, a rock of several tons weight to the distance of 150 feet. Electric fire has struck the spires, domes, and turrets of magnificent temples, riven the mountain masses, and shivered them into a thousand fragments. What shall we say, then, of the effects of an agent, whose power is so tremendous and irresistible, when its operation is transferred to the human body?

Professor Richardson, of St. Petersburg, was collecting electric fluid from the clouds into a receiver, when a ball of blue light suddenly issued from the vessel, and entering his head, left his body at the sole of his foot. The course of the electric fluid was indicated by the bruised appearances. He was struck *to the ground* a lifeless corpse. Here two things were observable—concussion and extravasation of blood, which demonstrated the violent shock he must have sustained.

Reasoning upon a succession of events that may occur, or speculating upon the mode in which lightning operates in *producing* death, would, in this place, be a vain and useless *discussion*, as it would tend to no practical result. My own *simple* idea upon the subject is, that the intensity of the electric action instantly annihilates all connexion between soul and body; thus animation is not suspended but destroyed; hence all means of resuscitation are vain.

5. *Of death from intense cold.*

When asphyxia occurs in consequence of a direct attack upon the heart, the order in which the functions cease is inverted. The cardiac action is first arrested in consequence of which the supply of arterial blood to the brain is interrupted, and sensation, voluntary motion, and mental phenomena, gradually fail, and with them respiration and the contractile power of moving parts. In this, a doctrine of great importance is involved,—that the simple interception of the flow of vitalized blood to the nervous centre is not so detrimental, nor so soon and inevitably fatal, as as the diffusion of purple blood through the substance of the brain. Asphyxia, from intense cold, is caused by the direct influence of low temperature upon the action of the heart.

The temperature of the body is said to be high or low relatively to the natural standard of animal heat, which is about 98° Fahr. The heat of the body is subject to considerable variation, but the differential indication are greater below than above 98°; for this reason; that the living body resists the increase of its caloric, but, under *certain atmospheric conditions*, parts with it freely, until it is reduced to a level with the surrounding air. But this deprivation of caloric does not take place without a considerable struggle on the part of the vital energy, for in all living bodies there is an innate power, "by means of which they repel an excess of heat, and retain the same temperature."

In this inquiry our attention will be confined to the explanation of the mode in which the body resists cold in the midst of a frozen atmosphere, and of the cause of asphyxia from the overcoming influence of an excessive diminution of temperature.

This resistance cannot be effected without an increased activity of organic life. It is on this account that digestion is more active, the pulse stronger and more frequent, and the vital energy greater, in cold weather.

Thus, when exposed to a moderate degree of cold, we experience more activity and strength, and move with increased agility; we are not fatigued by the most active exercise, and we strive to maintain our usual warmth, malgrê the debilitating influence of the cold. If the cold be not excessive our efforts are successful, and our exertions cause the disengagement of sufficient caloric to repair the loss we sustain by the evaporating agency of the atmosphere and surrounding bodies.

The body, however, cannot sustain, beyond a certain degree, the diminution of atmospheric temperature. If the cold be intense, and the vitality of the body is not powerful enough to cause an adequate reaction, the part affected becomes purple from the venous congestion, its sensibility is diminished or destroyed, its vitality is extinguished, and the death of the part ensues. If the entire surface of the body is equally exposed, its sensibility is subdued, the limbs stiffen, the voice is modulated spasmodically, sleep irresistibly invades the brain, to which the individual yields, but this is "the illusive sweet of a perfidious sleep," which inevitably ends in death. Thus many travellers who have lost their way have perished among the eternal snows of the Alpine ranges of the old and new world. And thus—"2000 soldiers of the Swedish army, under Charles XII, perished during a seige in the severe winter of 1709," and whole circles of French who bivouacked around their fires during the ever-memorable retreat from Moscow, were found frozen to death, morning after morning, by the intense cold.

Considerable strength and vigor of constitution are necessary to resist the intensity of the effects of cold. A moderate degree of cold imparts tone to the system, but where it is severe it debilitates and depresses vitality, and acts as a sedative. It will be easily understood how cold acts as a tonic, when it is remembered that motion strengthens our organs, and that there is power of re-action within us which is increased by use. There is no tonicity in cold itself; but the vigor, as we have said, depends upon *the re-action* of the vital influence. "The effects of cold differ not only according to its degree, but also according to the duration of exposure to it—to the state of the nervous system previous to or during the exposure, and to the general condition of the body at the time."

Cold operates upon the body in producing asphyxia after the following manner:—Under ordinary temperature arterial blood is circulated freely and copiously through the superficial textures of body, which gives them that healthy and *embonpoint* appearance so familiar to us; but when the warmth of the surrounding medium is considerably reduced, evaporation from the surface is promoted, and the animal heat sensibly decreases. The skin now becomes blanched and shrunken—shivering and *chattering* of the teeth come on, indicating the repulsion of the blood from the surface of body. The effluence of the blood from the heart is checked and the influx of venous blood to the central organs is accelerated; thus the internal tissues become congested, and contractility consequently enfeebled, so that the action of the heart and arteries is depressed, and their cavities are *gorged with blood*, which becomes more and more deteriorated the longer the congestion lasts. From the accumulation of impure blood in the brain, sensibility and voluntary motion gradually fail, and sleep becomes irresistible; pinching is diregarded, motion becomes impossible, the traveller throws himself upon a bed of snow, sleeps and dies asphyxiated.

In this species of suspended animation, the heart is primarily, the brain secondarily, and the lungs ternarily affected. The action of the heart and arteries is first obstructed, then depressed, and and, finally, extinguished; the operations of the brain are first impaired, the energy of thought and action is enfeebled, and sensation obtunded; they are then suspended, consciousness and motion are subdued, and the asphyxia is genuine and complete; and, lastly, the respiratory actions sympathise with the circulatory respiration becomes impeded, its periods lengthened, until one long, deep, and last, sigh breathes the enfranchised spirit forth into the hands of the God who gave it.

6. *Treatment of suspended animation.*

"It must be obvious," says Dr. Gregory, "that much caution is required in the treatment of asphyxia. While the doctrines connected with this subject are involved in such obscurity, our practice ought not to be regulated by the conjectures of persons who have no claim to physiological knowledge. In cases of such imminent danger as those of asphyxia, a measure not founded upon a thorough acquaintance with the subject may, very probably, add materially to the danger of the patient, check those ill-understood efforts of nature, from which alone real benefit could have been derived, and thus tend only to extinguish the glimmering flame of life. When we find blood-letting, cold affusion, the warm-bath, tobacco glysters, galvanism, and artificial respiration, recommended without discrimination in the treatment of asphyxia, it is obvious that no just understanding can exist of the nature of those changes which are taking place in the body, nor of the operation of each remedy."

In the restorative means, I shall hereafter propose, it will be my intention to suggest only those which can be legitimately deduced and supported by the physiological principles already advanced. I shall be careful not to embark in the uncertainties of speculation, nor, for the sake of novelty, broach hypotheses which, if not inductive are pregnant with danger and fraught with peril; my treatment shall be strictly inferential; I will shun plausibilities, and presume not to transgress what appear to me to be the bounds of plain unvarnished, physiological truth.

In our preceding observations it has been shown that in all cases of suspended animation, from whatsoever cause they may have arisen, life, or that peculiar and wonderful agent which originates organic results, has fallen infinitely below its ordinary equilibrium; or has ebbed, as it were, almost to its last, its ultimate diffusive eradiant gleam. At this stage "the mild and temperate breath of heaven" in vain operates by its accustomed impressions upon the insensible tissues of the aerial tubes; the common air no longer supplies a principle the activity of which is sufficiently concentrated to assist the agent of vital manifestations in rekindling its expiring embers—whose energy is influential enough to renew the flowings of its effluent stream.

If, under common conditions, an animal is made to respire oxygen gas, all its vital functions become energized; and if a man with phrenitis were caused to breathe pure oxygen, his life would be destroyed by the intense excitation. From this and other facts that might be stated, but the recital of which would be irrelevant here, we see that oxygen is possessed of highly stimulating and vitalizing properties. Now, if vitality be extraordinarily depressed, and, if that depression depend upon an interception of a due supply of oxygenated air, the indication to be fulfilled is manifestly this, *that an extraordinary stimulus must be exhibited, and that that stimulus must partake of those properties which are known to reside in the vital constituent of the ordinary respirable medium.* The lungs combine the oxygen of the air with the blood, by *a power which is peculiar to them.* "If it were otherwise," says Richerand, "there would be nothing to prevent a dead body from being restored to life, by inflating with oxygen its pulmonary tissue."

My humble opinion coincides with the authority I have quoted, and I feel assured, that if organic life be not irrecoverably gone, both it and animal life may be resuscitated, by inflating the lungs with pure oxygen gas.

We have seen that the pathological cause of obstructed respiration is a constriction of the glottis; and I question not, that the cause of failure in the means for the restoration of life, is attributable to the inflation of the alimentary canal instead of the *lungs.*

In our resuscitative endeavors, it is of the utmost importance that what we do should be done quickly. In order, therefore, to prevent the inflation of the stomach and bowels, and *to facilitate* the arterialization of the deteriorated blood, I propose the following measures:—Let the patient be placed with the trunk of the body reclining midway between the horizontal and vertical positions, and the head fixed so as that the integuments of the neck be put upon the stretch; an incision is then to be made, commencing about two-twelfths of an inch below the inferior margin of the cricoid cartilage, between the two sterno-thyroidei, and being prolonged perpendicularly downwards, is to terminate about two inches from the cartilage. This incision, through the integuments, being made, the tracheal rings must be exposed by pushing the muscles to either side, either with the handle of the scalpel or with the fingers. The point of the knife should then be introduced cautiously, lest the opposite side of the trachea be wounded between its third and fourth cartilages, and the opening be enlarged from within outwards, and from below upwards in the course of the first incision. This bronchotomic operation is by no means dangerous, and may be performed by any surgeon of common dexterity in as short, or even shorter time, than necessary to pass a tube into the trachea. Into this artificial opening the beak of the inflating apparatus should be inserted, out in doing this, the same caution must be observed, as in insinuating the point of the knife, and for the same obvious reason—that the opposing surface of the windpipe may not be injured.

In referring to the article "bronchotomy" in the surgical dictionary, I am glad to find my recommendation supported by the authority of so able a surgeon as Mr. Samuel Cooper: he says, "My own individual opinion is, that if a surgeon knows that he can inflate the lungs as completely and *expeditiously* without performing bronchotomy, as he could by making an incision into the trachea, he is right in dispensing with the latter operation. But in the generality of cases of suspended animation (that of new born infants excepted,) I much doubt whether, in actual practice, bronchotomy will not be found the best and most speedy means of enabling the surgeon to distend the lungs with air."

I have proposed the inflation of the lungs with oxygen gas; this necessarily implies a modification in the inflating apparatus, which should be as simple as comports with utility and efficiency. It should be composed of two parts,—the gas-holder and the tube. For the former, an ox bladder will answer very well, to which should be fitted a stopcock, at the tubal end of which there should be a female screw. This screw should be made so as to fit on to the vesical end of the tracheal pipe, and on the male screw of a pipe in the japan gasometer, whence the gas is transferred to the bladder. The tube which is to be inserted into the trachea should be made of silver, in length about three and a half or four inches, and in diameter about four-tenths of an inch; the tracheal end should be curved, the bend starting one inch from the end; somewhat abruptly; the extreme tracheal point must be finely rounded. Two inches of the body should be roughened, so that an assistant may hold it steadily during the process; and at the vesical end there should be a short male screw, by which it may be united to the stopcock.

There should be two bladders, the one filling, while the other is being emptied. The process of inflation must be continued as long as any signs of the heart's action remain, with the expectation that the nervous system may be rescued from that state of oppression into which it has been thrown by the ingression of venous blood. It was the opinion of Bichat, that this process could never restore suspended animation after the pulsation of the heart had ceased. But this opinion must not be implicitly received; for the fact of the heart's action being renewed by artificial respiration, after its pulsations have entirely ceased is supported by most credible testimony. Mr. Brodie has proved that the circulation of the blood may be supported for many hours in animals, even after the complete destruction of animal life by decapitation; hence he has thought that asphyxia produced by narcotic poisons, which operate primarily upon the brain, and secondarily on respiration, might be successfully treated by artificial respiration.

2. In the treatment of persons asphyxiated by the interception of air from constriction of the glottis, whether that constriction arise from water, irrespirable airs, hanging, throttling, &c., we must confide not in single remedies, but in a judicious combination. Our second indication is to relieve the congestion of the brain. To our common water cisterns there belong three pipes—the repletory, the depletory, and the waste. When the water rises to the level of the aperture in the waste pipe, it runs off, and however much the repletory pipe may discharge into the cistern, the water always remains at the same level, provided the *calibre* of the pipes bear a due relation to each other; but if by some accident the waste pipe become clogged, the cistern become preternaturally filled or congested, and if a remedy be not applied, the water would run over. To obviate this, the repletory pipe must be closed, or the depletory opened, until the proper functions of the pipes can be equilibrialized. This is an hydraulic illustration, but just so it is with a congested brain—the functions of the heart which regulate the influx and deflux of blood into the sinuses; being disordered, it is necessary to draw off by other means the stagnant fluid; this may be effected in addition to *inflation*, by a combination of the following remedies, viz., opening the external jugular vein—placing the body in a semi-recumbent posture, and increasing the temperature of the surface; *by the first*, blood is drawn immediately from the head; by the second, the blood descends from the brain by its gravity; and by the third, its flow is solicited to the surface of the body.

3. The means to be adopted for fulfilling the third indication, which consists in restoring the animal heat, depend *upon the* condition of the body at the time. If submersion has occurred in water almost at the freezing point, the body will have less chance of resuscitation, than if it had happened in water at a summer temperature. If the former be the condition of the body, the heat must be more gradually applied. In this case it should be laid in blankets, and well rubbed with warm flannels; during this time a fire might be kindled in the apartment, the temperature of which should be raised to 60° Fahr. To excite re-action, warm brandy and water should be thrown into the stomach from time to time, the exhibition of which must be determined, *not by quantity but by the effects* produced. If, however, the temperature of the body be not extremely low, then the rubbing may be performed before a fire, while the person reclines upon warm blankets. More attendants should not be allowed than are absolutely necessary, for a crowded apartment is highly prejudicial to an asphyxiated person, from the quantity of carbo-

nic acid gas which is generated from the lungs and bodies of many individuals collected into one place. Nothing contributes more to depress life than human breath, (as an example of which we have only to call to mind the catastrophe of the black hole of Calcutta,) especially in asphyxia, for here the vital powers are always weak; we must, therefore carefully remove any cause tending in the slightest degree to augment this debility.

As cold, by its sedative effects, increases congestion and diminishes vital energy I consider that cold affusion is highly injurious in cases of asphyxia, for, if but feeble remains of organic life exist, this remedy, I conceive, would tend to destroy them speedily. But it may be said it acts as a tonic. It is true cold does, *when vitality is sufficiently energetic to cause and maintain re-action;* but this is not the fact, for the vitality of the brain is suspended, and that of other organs fast waning away. The resuscitatives should be such as increase life, not such as diminish it. Richerand's remarks upon the effects of cold on delicate constitutions, are equally applicable to the condition of an asphyxiated person. "It is very injudicious," says he, "to recommend the cold bath to very young children, to delicate and nervous women, and to persons *whose constitutions are not capable of sufficient re-action.*

Anal injections of the infusion of tobacco have been recommended in asphyxia, but upon what data I am at a loss to conceive. It is narcotic and sedative, and in its operation produces on those unused to its effects, severe sickness, headach, extreme debility, cold sweats, and sometimes even convulsions. It has been often used to subdue spasmodic action, and in incarcerated hernia, but there are upon record many fatal cases from its employment. Tobacco, like cold, diminishes the vital energy; both, therefore, are manifestly obnoxious remedies in the treatment of suspended animation.

A remedy has been employed by some, certainly of a most curious description, and well calculated to accelerate final dissolution. It is the belief of many persons that the cause of death by drowning is the impletion of the lungs with water; and knowing that fluids descend by their own gravity they think that the most effectual method of evacuating the water is by suspending the asphyxiated person by his heels, not questioning but the remedy will be efficient. M. Louis is of opinion, that "they who are drowned inspire water, with which the air vessels and cells are quite filled." But M. Detharding thinks quite contrary; he maintains "that drowned persons have no water in their chests, or air-vessels of the lungs, and that they perish suffocated for want of air and respiration, and that while the person is under water the epiglottis applies itself so closely, that not one drop of water can pass." I have already noticed M. Richerand's opinion, that the air-passages after drowning are found to contain *a small quantity of frothy fluid;* and that if the body remain *long* under water, *the spasmodic action of the glottis ceases*, and that *then* water passes into the trachea and fills the lungs. Now M. Louis may be right, for the cases he has examined remained long under water; M. Detharding may be also right, for the cases he investigated may have been submersed only for a short time. But I think he is incorrect in assigning the close adaptation of the epiglottis, which is the coverlid of the glottis to this aperture, as the cause which prevents the aqueous inrush to the lungs. It is true, in the act of swallowing, it is adapted, but I cannot agree with him that it continues thus applied:—"Anatomy," says Mr. S. Cooper, "proves the impossibility of its being so." M. Richerand appears to me to have given the most perspicuous account; I believe with him that the ingress of water is intercepted *by the spasmodic constriction of the glottis*, and *not* by the adaptation of the epiglottis; and that the water obtains admission after this constriction has, in consequence of the final extinction of vitality, ceased. *In this case* hanging by the heels could do no harm, but to make it a rule of practice cannot be sufficiently deprecated; for, in the first place, while constriction of the glottis *continues*, supposing water to have obtained forcible admission, the closing of the laryngeal opening would prevent its efflux; and in the second place, the measure is highly detrimental, inasmuch as the congestion of the brain is augmented, a condition to which is attributable the suspension of animal life. Lastly, electricity has been employed for the purpose of restoring suspended animation. For my own part, I dissent from its exhibition. The practice is condemned by Baron Larrey, and the rest of the French surgeons. "An atmosphere," says M. Richerand, "highly electrical at the approach of a storm, renders respiration very laborious in some cases." And I know a lady who was once the subject of chorea, who could always tell the approach of a thunder storm, by the miserable feelings to which he was subjected by its influence upon her nervous system. We have seen that the electric fluid is a powerful agent in simultaneously arresting both organic and animal life. But it may be urged that the most deletorious substances, by judicious management, become most efficient restorative in disease. This is granted, but who will define the due intensity of electric action that ought to be transmitted through the body in which vitality is all but extinct?

7. *Treatment of strangulation.*

After what has been said of the treatment of asphyxia by drowning, little if anything remains to be added upon that of asphyxia by hanging, &c. Two very remarkable cases have been already related, illustrative of the fact that suffocation or strangulation is caused by constriction of the throat, so as to intercept the air in its passage to the lungs. The indication, therefore, is to give as speedy an admission of the air to the air-cells as possible. The body, therefore, if found hanging, must be instantly cut down, and the means recommended for the recovery of the drowned promptly instituted.

All endeavors would, of course, be fruitless, to restore that species of asphyxia which is induced by dislocation of the cervical vertebræ, and consequent injury to the spinal marrow. In this case nothing can be done.

8. *The treatment of asphyxia by irrespirable gases.*

The treatment of asphyxia brought on by that class of mephitic gases which affect respiration by constricting the glottis, must be conducted on principles analogous to those advised for the recovery of the drowned or strangulated. The indications are the same—viz. to restore the actions of the lungs, and to relieve the congestion of the brain. Hence artificial respiration, after the manner prescribed, must be promptly employed; blood should be evacuated from the external jugular, and stimulants should be injected per œsophagum and per anum. The asphyxiated person should be instantly removed from the situation where the accident happened to a cool well-ventilated apartment. The cutaneous circulation may be excited by friction, and as the temperature of the body, is for the most part considerable, there will be no need of the application of heat, and the position of the trunk must be such as to facilitate the return of the venous blood from the brain to the heart.

The success of treament in those cases of asphyxia which come on by exposure to the noxious influence of those gases which destroy life, by their specific operation upon the nervous system, is, in my humble opinion, very problematical. That nothing may be omitted that, under other circumstances, might have been available, those restorative measures should be employed which the judgment and physiological science point out, and which, in this essay, have been sufficiently explained. Artificial respiration should be practised, stimulants exhibited, blood evacuated, only few attendants employed, the chamber freely ventilated, &c. But, after all, I repeat my conviction, that when the person has been exposed a few seconds to aerial poisons, such as are now under consideration, there is nothing that can be done offering the remotest probability of success.

9. *Treatment of persons blasted by lightning.*

The electric fluid, it has been shown, does not suspend animal life, but instantly destroys it. When the body is struck by lightning, complete death ensues; I need, therefore, scarcely observe, that any kind of treatment will assuredly prove abortive. That man who shall hereafter restore to consciousness a senseless body struck by the lightning's blast, will richly deserve Promethean renown, and merit the honored title of "Great Father of Human Kind."

In asphyxia of this kind, no vitality exists upon which to act; for organic and animal life are both extinct, and to re-unite the departed spirit with the lifeless corse surpasses infinitely the mightiest efforts of the power and ingenuity of man.

10. *Treatment of asphyxia from intense cold.*

The last point of treatment to which I shall advert in this essay, is that of asphyxia produced by intense cold. We have already seen that cold is sedative and debilitating, and that it acts upon the system by depressing the action of the heart, and subduing the powers of life. Here then the vital energy is considerably *below* the ordinary equilibrium of life, a circumstance which guides us immediately to the indication to be fulfilled—namely, to restore it to its usual sphere of healthy action. In effecting this, however, great care must be taken that the re-action brought about be not too intense, for the extreme of action, as well as the extreme of depression, meet; they induce disorganizations. For example, in Russia, and other cold countries, nothing is more common than frost-bitten extremities. In the streets of northern cities, the salutation—"Sir, your nose is frosted," is of familiar occurrence. In this case the practice is, not to warm the nose by radiant heat, but to excite re-action in the part by rubbing it with snow. Were the individual to enter a warm room, the re-action would be so intense, that inflammation, and, eventually, mortification would ensue, and the nose would drop off, and so of any other part. Now, what is true of the less is also true of greater lesion. If, therefore, it be desired to restore animation to a body asphyxiated by intense cold, no artificial warmth should be applied, but re-action should be affected by friction with cold flannels. The indications are to solicit the return of the blood to the surface of the body, and to relieve the congestion of the heart and brain.

The body should be placed on blankets in a semi-recumbent posture in an apartment in which there is a free circulation of temperate air. Warm brandy may then be passed into the stomach, and renewed from time to time; this will tend to kindle the vital energy existing in that centre of all sympathies—the stomach.

Spirituous frictions must not be employed, for the spirit they contain by its evaporation increases cold. Dependence must be placed principally on friction with non-conducting bodies, internal stimulants, warm, though by no means hot, artificial respiration, &c. These means must be continued till either all reasonable hopes of success be removed, or consciousness return so far, as that we may fairly conclude that the mutual operations of the heart, brain, and lungs, may be sustained by their own innate powers.

In conclusion, I have only to add that it has been my humble endeavor to simplify the treatment of suspendedanima tion, which appears to me hitherto to have been mystified, because imperfectly understood.

I have investigated the subject of asphyxia physiologically, and have deduced my resuscitative principles from the data afforded us by those whose researches have illustrated "the science of life."

Remarks on the Cholera Morbus. BY ALPHA, M. D.

Perceiving by your occasional remarks on the malignant *cholera*, that you believe it to be a disease propagated by contagion, I hope that I shall be considered as paying you no small compliment on the score of fair intentions and love of science, by counting, as I do, upon your readiness to give place to statements in opposition to the opinions you hold. If we view the progress of this terrific malady, as it tends to disorganize society wherever it shows itself, as it causes the destruction of human life on an extensive scale, or as it cramps commerce, and causes vast expense in the maintenance of quarantine and cordon establishments, no subject can surely be, at this moment, of deeper interest. It is to be regretted, indeed, that in this country political questions (of great magnitude certainly) should have prevented the legislature, and society at large, from examining, with due severity, all the data connected with cholera, in order to avert, should we unhappily be afflicted with an epidemic visitation of this disease, that state of confusion, bordering on anarchy, which we find has occurred in some of those countries where it has this year appeared.

Were this letter intended for the eyes of medical men only, it would be unnecessary to say that, during epidemics, the safety of thousands rests upon the solution of these simple questions:—Is the disease communicable to a healthy person, from the body of another person laboring under it, either *directly*, by touching him, or *indirectly*, by touching any substance (as clothes, &c.) which might have been in contact with him, or by inhaling the air, about his person, either during his illness or after death? Or *is* it, on the other hand, a disease with the appearance and progress of which sick persons, individually or collectively, have no influence, the sole cause of its presence depending on unknown states of the atmosphere, or on terrestrial emanations, or on a principle, *aura*, or whatever else it may be called, elicited under certain circumstances, from both the earth and air? In the one case we have what the French, very generally I believe, term *mediate* and *immediate* contagion, while the term *infection* would seem to be reserved by some of the most distinguished of their physicians for the production of diseases by a deteriorated atmosphere, and much confusion would certainly be avoided by this adoption of terms. Now, it is evident that incalculable mischief must arise when a community acts upon erroneous decisions on the above questions; for, if we proceed in our measures on the principle of the disease not being either directly or indirectly contagious, and that it should, nevertheless, be so in fact, we shall consign many to the grave, by not advising measures of separation between those in health, and the persons, clothes, &c., of the sick. On the other hand, should governments and the heads of families act on the principle of the disease being transmissible from person to person, while the fact may be, that the disease is produced in each person by his breathing the deteriorated atmosphere of a certain limited surface, the calamity in this case must be very great; for, as has happened on the Continent lately, cordons may be established to prevent flight, *when flight would seem to be the only means of safety to thousands*; and families, under a false impression, may be induced to shut themselves up in localities where "every breeze is bane."

Hence then the importance, to the state and to individuals, of a rigid investigation of these subjects. It is matter of general regret, I believe, among medical men, that hitherto the question of cholera has not always been handled in this country with due impartiality. Even some honest men, from erroneous views as to what they consider "the safe side" of the question, and forgetting that the safe side can only be that on which truth lies (for then people will know *what* to do in the event of an epidemic), openly favor the side of contagion, contrary to their inward conviction; while the good people of the quarantine have been stoutly at work in making out that precautions are as necessary in the cholera as in plague. Meantime our merchants, and indeed the whole nation, are filled with astonishment on discovering that neighboring states enforce a quarantine against ships from the British dominions, when those states find that cases of disease are reported to them as occurring among us, resembling more or less those which we have so loudly, and I must add prematurely, declared to be contagious. It is quite true, that however decidedly the question may be set at rest in this country, as to the non-contagion of cholera, our commerce, should we act upon this principle, would be subject to vexatious measures, at least for a time, on the part of other states; but let England take the lead in instituting a full inquiry into the whole subject, by a Committee of the House of Commons; and if the question be decided against quarantines and cordons by that body, other countries will quickly follow the example, and explode them as being much worse than useless, as far as their application to cholera may be concerned. It is very remarkable how, in these matters, one country shapes its course by what seems to be the rule in others; and, as far as the point merely affects commerce, without regard to ulterior considerations, it is not very surprising that this should be the case; but it is not till an epidemic shall have actually made its appearance among us, that the consequences of the temporizing, or the precipitation, of medical men can appear in all their horrors. Let no man hesitate to retract an opinion already declared, on a question of the highest importance to society, if he should see good reason for doing so, after a patient and unbiased reconsideration of all the facts. We are bound, in every way, to act with good faith towards the public, and erroneous views, in which that public is concerned, ought to be declared as soon as discovered. To show you and others how erroneous some of the data are from which you are likely to have drawn conclusions, is the main cause of my wish to occupy some of your pages from time to time, as circumstances may permit; and in doing this it is certainly not my wish to give offence to respectable persons, though I may have occasion to notice their errors or omissions.

Previous to proceeding to the consideration of other points, it may be observed, that all doubt is at an end as to the identity of the Indian, Russian, Prussian, and Austrian epidemic cholera; no greater difference being observed in the grades of the disease in any two of those countries than is to be found at different times, or in different places, in each of them respectively. At the risk of being considered a very incompetent judge, if nothing worse, I shall not hesitate to say, that if the same assemblage of symptoms be admitted as constituting the same disease, it may at any time be established, to the entire satisfaction of an unprejudiced tribunal, that cases of cholera not unfrequently proving fatal, and corresponding in every particular to the average of cases as they have appeared in the above countries, have been frequently remarked as occurring in other countries, including England; and yet no cordon or quarantine regulations, on the presumption of the disease spreading by contagion. For my own part, without referring to events out of Europe, I have been long quite familiar, and I know several others who are equally so, with cholera, in which a perfect similarity to the symptoms of the Indian or Russian cholera has existed: the collapse—the deadly coldness with a clammy skin—the irritability of the stomach, and prodigious discharge from the bowels of an opaque serous fluid (untinged with bile in the slightest degree)—with a corresponding shrinking of flesh and integuments—the pulseless and livid extremities—the ghastly aspect of countenance and sinking of the eyes—the restlessness so great, that the patient has not been able to remain for a moment in any one position—yet, with all this, nobody dreamt of contagion; no precautions were taken on these occasions "to prevent the spreading of the disease," and no epidemics followed. In the *Glasgow Herald* of the 5th ult., will be found a paper by Dr. Marshall (a gentleman who seems to reason with great acuteness), which illustrates this part of our subject. This gentleman appears to have had a good deal of experience in Ceylon when the disease raged there, and I shall have occasion to refer hereafter to his statements, which I consider of great value. Nobody can be so absurd as to expect, that in the instances to which I refer, *all* the symptoms which have ever been enumerated, should have occurred in each case; for neither in India nor any where else could all the grave symptoms be possibly united in any one case; for instance, great retching, and a profuse serious discharge from the bowels, have very commonly occurred where the disease has terminated fatally; yet it is not less certain, that even in the epidemics of the same year, death has often taken place more speedily where the stomach and bowels have been but little affected, or not at all. To those who give the subject of cholera all the attention which it merits, the consideration of some of those cases *which have*, within the last few weeks, appeared in the journals of this country, cannot fail to prove of high interest, and must inspire the public with confidence, inasmuch as they show, *beyond all doubt*, that the disease called cholera, as it has appeared in this country, and however closely, according to the opinion of some people, its symptoms may resemble the epidemic cholera of other countries, *is not* contagious. On some of those cases so properly placed before the public, I shall perhaps be soon able to offer a few remarks: meanwhile, I shall here give the abstract of a case, the details of which have not as yet, I believe, appeared, and which must greatly strengthen people in their opinion, that at least *our cholera* cases, however formidable the symptoms, and though they sometimes end rapidly in death, still do not possess the property of communicating the disease to others. I do not mean to state that I have myself seen the case, the details of which I am about to give, but aware of the accuracy of the gentleman who has forwarded them to me, I can say, that although the communication was not made by the medical gentleman in charge of the patient, the utmost reliance may be placed on the fidelity of those details:—

Thursday, August 11th, 1831. Martin M'Neal, aged 42, of the 7th fusileers, stationed at Hull, was attacked at a little before four, A.M., with severe purging and vomiting: when seen by his surgeon at about four o'clock, was laboring under spasms of the abdominal muscles, and of the calves of the legs. What he had vomited, was considered as being merely the contents of the stomach, and, as the tongue was not observed to be stained of a yellow color, it was inferred that no bile had been thrown up. He took 70 drops of laudanum, and diluents were ordered. Half past six, seen again by the surgeon, who was informed that he had vomited the tea which he had taken; no appearance of bile in what he had thrown up; watery stools, with a small quantity of feculent matter; thirst; the spasms in abdomen and legs continued; countenance not expressive of anxiety; skin temperate; pulse 68 and soft; the forehead covered with moisture. Ordered ten grains of calomel, with two of opium, which were rejected by the stomach, though not immediately.

Eight o'clock, A.M. The features sinking, the temperature of the body now below the natural standard, especially the extremities; pulse small; tongue cold and moist; a great deal of retching, and of fluid vomited resembling barley-water, but more vicid; constant inclination to go to stool, but passed nothing; the spasms more violent and continued; a state of collapse the most terrific succeeded. At nine o'clock, only a very feeble action of the heart could be ascertained as going on, even with the aid of the stethoscope; the body cold, and covered with a clammy sweat; the features greatly sunk; the face discolored; the lips blue; the tongue moist, and very cold; the handsand feet blue, cold, and shrivelled, as if they had been soaked in water, like washerwomen's hands; no pulsation to be detected throughout the whole extent of the upper or lower extremities; the voice changed, and power of utterance diminished. He replied to questions with reluctance, and in monosyllables; the spasms became more violent, the abdomen being, to the feel, as hard as a board, and the legs drawn up; cold as the body was, he could not bear the application of heat, and he threw off the bed-clothes; passed no urine since first seen; the eyes became glassy and fixed; the spasms like those of tetanus or hydrophobia; the restlessness so great, that it required restraint to keep him for ever so short a time in any one position. A vein having been opened in one of his arms, from 16 to 20 ounces of blood were drawn with the greatest difficulty. During the flowing of the blood, there was great writhing of the body, and the spasms were very severe: friction had been arduously employed, and at ten, A.M., he took a draught containing 2 1-2 drachms laudanum, and the vomiting having ceased, he fell asleep. At two, P.M. reaction took place, so as to give hopes of recovery. At four, P.M. the coldness of the body, discoloration, &c., returned, but without a return of the vomiting or spasms. At about half past 8 he died, after a few convulsive sobs.

On a post-mortem examination, polypi were found in the ventricles of the heart, and the cavæ were filled with dark blood. Some red patches were noticed on the mucous membrane; but the communication forwarded to me does not specify on what precise part of the stomach or intestinal canal; and my friend does not appear to attach much importance to them, from their common occurrence in a variety of other diseases. It remains to be noticed, that the above man had been at a fair in the neighborhood on the 9th (two days preceding his attack), where, as it is stated, he ate freely of fruit, and got intoxicated. On the 10th he also went to the fair, but was seen to go to bed sober that night, The disease did not spread to others, either by direct or indirect contact with this patient.

Now let us be frank, and instead of temporising with the question, take up in one hand the paper on "cholera spasmodica" just issued, for our guidance, from the College of Physicians by the London Board of Health, and in the other, this case of Martin M'Neal (far from being a singular case this year, *in most of the important* symptoms),—let the symptoms be compared by those who are desirous that the truth should be ascertained, or by those who are not, and if distinctions can be made out, I must ever after follow the philosophy of the man who doubted his own existence. The case, as it bears on certain questions *connected with* cholera, *is worth volumes of what has been said on the same subject.* Let it be examined by the most *fastidious*, and the complete identity cannot be got rid of, even to the *blue* skin, the *shrivelled fingers*, the *cold tongue*, the *change in the voice*, and the *suppression of urine*, considered in some of the descriptions to be found in the pamphlet issued by the Board of Health, as so characteristic of the "Indian" cholera; and this, too, under a "constitution of the atmosphere" so remarkably disposed to favor the production of cholera of one kind or other, that Dr. Gooch, were he alive, or any close reasoner like him, must be satisfied, that were this remarkable form of the disease essentially contagious, no circumstance was absent which can at all be considered essential to the propagation of a contagious disease. As the symptoms in the case of M'Neal were, perhaps, more characteristically grouped than in any other case which has been recorded in this country, so it has also in all probility occurred, that more individuals had been in contact with him during his illness and after his death, as the facility in obtaining persons to attend the sick, rub their bodies, &c., must be vastly greater in the army than in ordinary life; so that in such cases it is not a question of one or two escaping, but of *many*, which is always a test.

Of the College of Physicians we are all bound to speak with every feeling of respect, but had the document transmitted by that learned body to our government, on the 9th of June last, expressed only a "philosophic doubt," instead of making an assertion, the question relative to the contagion or non-contagion of the epidemic, now making ravages in various parts of Europe, would be less shackled among us, while precisely the same regulations, as to quarantine, might have been carried into effect; for we all know that in such matters governments will act in a case of *doubt* as to contagion, quite as if contagion were proved. People are naturally little disposed to place themselves with the knowledge they may have obtained from experience and other sources, in opposition to such a body as the College; but as, in their letter to government of the 18th June, they profess their readiness, should it be necessary, to "reconsider" their opinions, we, who see reason to differ from them, may be excused for publishing our remarks. It seems surprising enough that, in their letter to government of the 9th of June, the college should have given as a reason for their decision as to the disease being infectious (meaning, evidently, what some call contagious, or transmissible from *persons*)—"having no other means of judging of the nature and symptoms of the cholera than those furnished by the documents submitted to us." Now, according to the printed parliamentary papers, among the documents here referred to as having been sent by the Council to the College, was one from Sir Wm. Crichton, Physician in Ordinary to the Emperor of Russia, in which a clear account is given of the symptoms as they presented themselves in that country; and, if the College had previously doubted of the identity of the Russian and Indian cholera, a comparison of the symptoms, as they were detailed by Sir William, with those described in various places in the *three volumes* of printed Reports on the cholera of India, in the college library, must at once have established the point in the affirmative. In fact we know that the evidence of Dr. Russell, given before the College, when he heard Sir William's description of the disease read, fully proved this identity to the satisfaction of the College. Had the vast mass of information contained in the India Reports, together with the information since accumulated by our Army Medical Department, been consulted, all which are highly creditable to those concerned in drawing them up and contain incomparably better evidence, that is, evidence more to be relied on, than any which can ever be procured from Russia or any other part of the world—had these sources of information been consulted, as many think they should in all fairness have been, the College would probably have spoken more doubtingly as to cholera, in any form, possessing the property of propagating itself from person to person. Much of what passes current in favor of the contagion of cholera rests, I perceive, on statements the most vague, assertions in a general way, as to the security of those who shut themselves up, &c. To show how little reliance is to be placed on such statements, even when they come from what ought to be good authority, let us take an instance which happened in the case of yellow fever. Doctor, now Sir Wm. Pym, superintendent of the quarantine department, published a book on this disease in 1815, in which he stated, that the people shut up in a dockyard, during the epidemic of 1814, at Gibraltar, all escaped the disease, and a Dr. Wm. Fraser, also of the quarantine, and who was on the spot, made a similar statement. Now, we all believed this in England for several years, when a publication appeared from a gentleman of the name of Halloran, of the medical department of Gibraltar garrison, in which he states that he had made inquiries from the authorities at that place, and that he discovered the whole statement to have been without the smallest foundation, and *furnishes* the particulars of cases which occurred in the dockyard, among which were some deaths; this has never since been replied to—so much as a caution in the selection of proofs.

To show, further, how absurdly statements respecting the efficacy of cordons will sometimes be made, it may be mentioned that M. D'Argout, French minister of public works, standing up in his place in the chamber, *on the 3d instant*, and producing his estimates for additional cordons, &c., stated, by way *of proving* the efficacy of such establishments, that in Prussia, where, according to him, cordon precautions had been pre-eminently rigorous, and where "*le territoire a été defendu pied à pied*," such special enforcement of the regulations was attended with "*assez de succès*:" in the meantime the next mail brings us the official announcement (*dated Berlin, Sept.* 2) of the disease having made its appearance there!

To conclude, for the present: if there be one reason more than another, why the question of cholera should be scrutinized by the highest tribunal—a parliamentary committee—it is, that in the "papers" just issued by the Board of Health, the following passage occurs (page 36):—"But in the event of such removal not being practicable, on account of extreme illness or otherwise, the prevention of all intercourse with the sick, even of the family of the person attacked, must be rigidly observed, unless," &c. There are at least some who can duly appreciate all the consequences of this; but enough—let us do all that human wisdom can suggest in order to ascertain whether it be really necessary that, in the event of a cholera epidemic,

> "The living shall fly from
> The sick they should cherish."

English Cholera. On the use of opium and the mustard cataplasm.—*By* JOSEPH A. SMITH, *Esq., Surgeon, Manchester.*

I presume the disease termed English cholera has offered few varieties in character. Its severity may have been instigated or determined in individual instances chiefly by the age, sex, and previous habits of the patient; beyond this, as far as my observation has gone, I cannot detect any difference between the epidemic which has been prevalent in this town, and the affection so elegantly described in your pages by Mr. Garner of Nottingham.

I cannot, however, coincide with the suggestions of that gentleman respecting the use of prussic acid. It is certainly true of many forms of epidemic, that after a time those disordered actions which, in their assemblage, constitute its history, seem as it were to have worn themselves out; the subsidence of the disease, not unlike (excepting in definite duration) many of the exanthemata apparently depending upon the passing away of a certain train of morbid associations having no disposition to permanency, and necessarily terminating in health. With such affections it requires but little tact to grapple; they may and will subside under any form of treatment not positively injurious, nor do I doubt but that many cases of what is termed cholera have been of this harmless character.

Severer forms are, however, occasionally met with. Violent vomiting, preceded by pain and oppression in the epigastrium, intense irritability of the mucous gastric surface continued during several hours, and perhaps as the consequence of this; spasms of the gastrocnemii and muscles of the foot, coldness of the extremities and skin, and an almost imperceptible pulse. Purging, alternating with sickness, in the early stage, with copious evacuations, subsequently, of a thin frothy mucus tinged with blood; in fact the patient seems in many instances (to quote the words of one who has described the affection well,) to be dying, or in the last stage of acute abdominal inflammation.

Are these the cases to which so deadly a sedative and depressant as prussic acid is applicable? It appears that, in the case cited by Mr. Garner, pills of calomel and opium had been regularly administered during the day without benefit, the vomiting remaining unrelieved. Admitting that the sedative action of the acid was beneficially established in this instance, no deduction, no inference can be made from this case to others, inasmuch as the case was not one of well-marked severity. I will not say the acid was useful, but I am confident that it is only fitted for the relief of comparatively trifling cases. That, *it produces good may be true, but that good is effected at an immense expenditure of the living power*—such a sacrifice in fact as cases resembling those I have witnessed would never bear. Nor do I attribute Mr. Garner's success to the calomel and opium which probably had been given in minute doses. I think I have reason to believe that calomel exasperates the sickness, especially when from one to three grains are repeatedly given. After stating to you that I have tried the acid unsuccessfully in the case of an elderly female whom I found in a sinking state, from vomiting, cramp, and tenesmus, allow me to lay before your readers a mode of practice which, though it lays no claim to novelty, has never disappointed me. Finding that fluids of the mildest description, even in the minutest quantities, are rejected, or useless attempts at vomiting are excited, I direct two, three, or four grains of powdered opium to be swallowed in form of pill, enjoining abstinence from liquids during the succeeding hour. The epigastrium is to be well washed with vinegar, and and a large cataplasm of mustard and hot water instantly applied. I can truly say that in many instances the poultice has acted like a charm, the skin is shortly reddened and painful, and just as this action is established the vomiting ceases, the pulse rises and becomes full, the surface regaining warmth, and the stomach its power of retaining liquids. *Purgatives* form the after treatment, and although there may have been severe tenesmus and scanty evacuations, in a few hours the bowels are copiously unloaded, and recovery comparatively rapid.

I was led to a trial of the mustard, from the recollection of a case of spasm of the stomach, in which its beneficial effects were almost instantly evident. Although it is too customary to announce as novelties remedies which have been long known and valued, perhaps it would be well to seek for more precision in the application of those simple agents we possess, than either to adopt as new the prescriptions of a past age, or the untried, uncertain, and hazardous formulæ of the new.

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AN ESSAY ON EXCISION OF THE TONSILS.

TONSILLITIS, like other diseases, assumes different forms, according to the character and amount of the exciting cause or causes, age, sex, and constitution of the person. I do not intend to treat of all its modifications, my object being directed entirely towards the elucidation of the chronic engorgement which it leaves behind. This condition of tonsils, as far as I have observed, is the result of one of the three following series of morbid processes:

1. In healthy adult persons, the severer forms of tonsillitis generally terminate by suppuration, the matter is evacuated, the tumefaction subsides, and the parts morbidly engaged soon return to their pristine condition. It is a pathological law that tissues, when once inflamed, are more liable to be again attacked than those which have never been affected; therefore, in accordance with this principle, we find that those persons who have once had tonsillitis are very commonly harassed with returns of the disease. The consequence of such attacks, particularly when cold, astringent, and stimulating gargles have been used, or when scarifications, with the view of reducing the inflammation; and premature punctures and incisions, intended for the evacuation of matter, are practised, is induration and enlargement of the tonsils.

2. In infants of a scrofulous habit, the tonsils sometimes enlarge without any known exciting cause; but generally this alteration is coincident with ramollisement of the bones, tumefaction of the abdomen, and emaciation, or irritation of the bowels, as manifested by griping pains, flatulence, humid tongue, foul breath, and green, fetid, and curdled stools.

3. In young persons of a scrofulous character and sanguine temperament, from exposure to wet or cold, the tonsils become affected with subacute inflammation; generally medical treatment is not sought after, the person follows his occupation, a small abcess forms, advances slowly, and after a week or two he feels well, with the exception of a slight stiffness and tenderness of the fauces. If this attack occurs in the winter, others of a similar nature ensue at intervals of a few weeks;

still he pursues his business, after some time, however, he seeks for advice, when his tonsils are found enlarged.

I have been particular in examining the state of the tonsils when in one or other of the conditions now described. The results of my investigations are as follows: In the first form of disease the surface of the tonsil is ragged, its investing mucous membrane destroyed, except near the base, where it is thick and friable, its structure rocky, homogenous, and of a reddish brown color, it adheres firmly to the surrounding parts, and when fine size injection is forced into the corresponding carotid, the surrounding parts become highly colored, and the enlarged mass appears to receive more blood than natural. In the second form, the surface of the tonsil is smooth, its mucous membrane is entire and loosely attached to it, its structure spongy and but little vascular, and it is connected but very loosely with the subjacent parts. In the third form, though the surface of the tonsil is irregular, still the irregularities are rounded off, so as to produce more or less of a tuberculated appearance; its mucous membrane is thickened, and in different points, particularly between the tubercles, we may detect ulcerations and cicatrices, and here as well as over the site of any contained purulent depots, this envelope adheres firmly; but in the intermediate spaces the bond of union is not more firm than natural; its structure is uneven, being composed partly of fleshy matter and atheromatous deposits, some of which are still crude, while others are mature; finally, by injection it is proved to be more vascular than natural.

When the tonsils are enlarged they press on the orifices of the Eustachian tubes and produce deafness, project into the internal fauces and impede deglutition, and by overhanging the rima glottidis, destroy the voice, and so far impair respiration that it becomes sonorous and uneven, particularly during sleep, in consequence of active exercise, or any slight attack of inflammation. Paulus Ægineta was aware of these consequences, for he says, "*Tonsillæ ultra modum auctæ et velut induratæ deglutitionique et spiritui difficultatem functiones inducentes.* (*De Re Medicinâ*, lib. v. cap. xxx.) But a worse consequence than any yet mentioned, is deformity of the thorax. As far as I know, Dupuytren first observed and explained it, as a consequence of enlarged tonsils. Sanson and Begin thus comment on it: "*Cette déformation que M. le professeur Dupuytren attribue à l'effet des contractions énergiques auxquelles les muscles inspiraux sont obligés de recourir, pour vaincre les obstacles qui s'opposent à l'entrée de l'air dans la poitrine, se rencontre si fré-*

quemment en même temps que l'engagement tonsillaire, que nous avons vu souvent le praticien que nous venons de nommer, annoncer que l'une de ces affections devait exister, seulement parce qu'il avait constaté l'existence de l'autre." [Médecine Opératoire, par R. B. Sabatier; nouvelle édition, par L. J. Sanson et J. Bégin, tome iii. p. 313.]

It is certainly only under such circumstances as those last described that we ought to attempt the removal of the tonsils, for I have known several cases in young and scrofulous children, where the tonsils were not only enlarged but indurated, and without any medical aid they have returned to their pristine state. No person can venerate Celsus more than I do, nevertheless I am aware of some false principles he has inculcated, and I lament that surgeons are enabled to use his classic name as authority for excising the tonsils when indurated, (and necessarily enlarged,) for he says: "*Tonsillas autem que post inflammationem induerunt, cum sub levi tunicâ sint, oportet digito circumradere et evellere, si ne sic quidem resolvuntur, hamulo excipere et scalpello excidere.*" [Lib. vii. cap. iii. p. 405. *Ed. Valert.*]

It must be admitted by the anatomist who is acquainted with the healthy and diseased structure of the parts, that the excision of the tonsils is perfectly free from danger, and by all those who have performed and witnessed the operation, that it is simple in the extreme, and attended with but little suffering; therefore I think it useless to enter into any dissertation on its superiority over the actual cautery recommended by Marcus Aurelius Severinus, to the potential cautery used by Wiseman, and the ligature first proposed by G. Guillemeau.

Though we find the first mention of the operation for excision in the treatise of Celsus, still it is certain that his description of it is very loose and imperfect; for he does not say any thing about fixing the jaw and tongue, neither does he describe the kind of knife to be used, nor the method of making the incision.

Paulus thus describes the operation, "*Nos ipsi hamulum in tonsillam defigimus, ipsamque quantum ejus fieri potest attrahimus, absque hoc ut membranæ simul attrahantur, et postea ipsam totum ex fundo, per scalpellum linguæ incurvatæ aptum, et ad manum commodum, resecamus.* [De Re Medicâ, lib. v. cap. xxx.]

One part of this statement is very objectionable. I allude to the total removal of the tonsil, and this Atius seems to have dreaded; for when treating of this subject he says, "*Excinditur autem ex eâ quod supereminet, juxta medium ejus* *quod præter naturam excrevit, qui enim dum omnem quæ præter naturam accrevit carnem, excindunt, etiam naturalem carnem ex fundo auferunt, periculosa sanguinis eruptionis authores fiunt.* [*Tetrabili* ii, sermone iv. cap. xlviii.] Junker held the same opinion, for he says, "*Considerandum est quod excedens tantum portio, non autem naturalis auferenda sit.*" [*Conspect. Chirurg. De operationibus in cavitate oris,* p. 620.] Both the authors just quoted dreaded hemorrhage from deep incisions of the amygdalæ; but besides the danger of wounding the internal carotid, it is altogether unnecessary to remove more than the portion which projects beyond the pillars of the fauces; for in the many cases I have operated on after this manner, I have not observed a return of the disease in a single instance, nay, in the majority of them, the remaining portion of the tonsil has become new-modelled, and all induration and appearance of disease has left it.

Moschati having failed with the ligature so lauded by Sharp, practised excision three times successfully by a single stroke of a curved bistoury; but in his fourth case an accident occurred which led him to change this method of operating. I shall relate the particulars of this case, as they are all-important, in so much as they show how unwittingly and how likely a serious error may be committed, and at the same time explain the only method of saving life when it occurs; but after all, the great lesson which it teaches, is *how* we are to avoid the error. Madame N., æt. 40, had the left tonsil enlarged, Moschati proceeded to remove it; having seized the tumor with a hook, he applied a bistoury to its superior surface, but before he had it more than three-fourths divided, the patient was seized with cough, which caused Moschati to desist. When the hook and knife were removed, some mouthfuls of blood were thrown up, the respiration became short, irregular, and in a few seconds the difficulty amounted to suffocation, and in all probability death would have ensued, had not the operator thrust his forefinger into the fauces, seized the tonsil which hung into the rima glottidis and extracted it. [*Mémoires de l'Academie Royale de Chirurgie,* tom. xiv. p. 302.] A similar accident occurred twice to Wiseman; and not long since I experienced it myself. I operated with the scissors, and when I was approximating their blades, the patient forcibly drew her head backwards (though firmly held) and thus separated the instrument from the tonsil. She was instantly seized with strangulation and appeared as if about to expire; therefore, with all possible despatch, I forced my forefinger into the fauces, and immediately perceived that the tonsil had been completely severed, except for a small extent below and behind, and that the detached portion hung into the rima glottidis; I hooked it up with my forefinger, and during the excessive writhings of the trunk, I held my finger in position, while I introduced a curved polypous forceps, seized the tonsil, and excised it with a curved bistoury. The error of Moschati led him to change his method of operating, which he now conducted as follows: The patient being secured, and the jaw and tongue fixed, he seized the tonsil with a hook and divided it throughout its entire length with a curved knife. When the blood ceased to flow, he made a second section, cutting the other at right angles. Finally he plugged the incisions with charpie, in order to prevent union. On the fourth day he removed one of the four portions marked out by the incisions, and the others at intervals of three days; and if any irregularities remained he destroyed them with the *kali causticum cum calce.* (*Op. Cit.*)

It is well for us to profit by the error of Moschati, and when we use a bistoury, to cut from below upwards, and when a scissors, to have one of its blades terminated by a vertical bar; but his improved operation is too puerile to have any followers at the present day. Maurian regarded it as unnecessarily complicated, and he very clearly demonstrated that the accident which principally actuated Moschati was groundless, provided only the exuberant portion was removed. He carefully examined the tonsils when enlarged in the dead body, and found that the exuberant portion was not traversed by any vessels or nerves of importance. He was in the habit of excising them with the curved scissors engraved by Lavert, (*Planche* iv. *Fig.* vi.) which corresponds to the erroneous description given by Fabricius of the instrument of Ægineta.

Foubert performed excision with a hook and knife, [*Mémoires de l'Academie Royale*, tome xiv. p. 325.] Chaque, in his first operations, extirpated them by repeated sections executed partly with the curved scissors and partly with the knife; but he soon practised the operation by a single stroke of a knife, which he invented for this purpose. The handle of this instrument was about nine centimetres in length, and attached to a blade at an angle of 160; this blade was eleven centimetres long, blunt at its extremity, slightly curved, and with a cutting edge, extending about two millimetres from its distal end, on the concave side. [*Mémoires de l'Academie Royale*, tom. xiv. planche xii.] He also invented a *speculum oris*, to aid in this operation, which is likewise engraved in the plate alluded to.

M. Muzeux, a contemporary and fellow-citizen of Chaque, thought that the double hook did not seize the tonsil conveniently, bring it forward regularly, or render it sufficiently steady during the application of the cutting instrument; therefore he substituted for it a curved forceps, each branch of which was terminated by a double hook. This instrument was also engraved by order of the Royal Academy, and still retains the name *La pince de Muzeux.*

Sabatier at first used the simple hook, but afterwards changed it for the instrument of Muzeux, which he thought adjusted itself much more commodiously to the portion of the tonsil about to be removed. The bistoury which he employed did not differ from that in ordinary use, except that it was more long, and blunt at its extremity. He practised excision, by cutting from below upwards, on eight subjects who had both tonsils enlarged, six of whom were females, and in all the operation was successful. [*Méd. Opérat.* tom. iii. p. 311, 12.]

Desault for a long time used the hook and knife, but he abandoned both,—the first, because when he seized the tonsil, all the throat was thrown into spasm and commotion,—the second, because it was liable to injure important parts. To avoid such inconvenience and danger, he employed the *kiotome,* which he designed for dividing cysts of the bladder. This instrument consists of a silver sheath and steel blade, the former being so hollowed out near its distal extremity as to receive the portion of the tonsil about to be removed, while the latter has an oblique cutting edge at its extremity, which severs the tonsil when pushed on through the sheath. [*Œuvres Chirurgicales,* tom. i. planche iv.]

Dupuytren operates with a straight buttoned bistoury and the forceps of Muzeux, cutting always from below upwards. [*Méd. Opérat. par Sabatier,* tom. iii. p. 314.]

Dr. Physic, of Philadelphia, has recommended, for the excision of the tonsils, the compound instrument consisting of a ring and knife, previously used by others for the excision of the uvula. [*See B. Bell's Surgery.*]

Dr. Cox, of this city, has invented two instruments for this operation: 1st. a ring, grooved on one side, and attached to a handle; 2d. a bistoury, exactly corresponding to that of Chaque, with a pivot on its side, near the distal extremity. The operation is performed with these instruments by placing the ring on the tonsil, and then by introducing the pivot of the blade in the groove of the ring, the bistoury is pushed forwards until it completes a circle, and thus removes the portion of the tumor placed before the ring. [*New-York Medical and Physical Journal.*]

Mr. Dixon has constructed an instrument consisting of a ring and a concealed curved bistoury, which cuts from behind forwards and above downwards, by drawing a handle connected with it outwards. [*New-York Medico-Chirurgical Bulletin*, vol. i. page 137.]

I shall now offer a few remarks on the operation as performed by modern surgeons, and then conclude by describing the method which I consider most advisable.

The great objection to the knife and forceps of Muzeux, as used by Sabatier, Dupuytren, and almost all the surgeons of Europe, consists in the fact, that the operator must trust the spatula, for the depression of the jaw and tongue, to an assistant, and without the assistant sees fully the interior of the mouth, he cannot do his duty properly, for it is absolutely necessary for him to have a distinct view of the parts to be operated on. Therefore, it is not difficult to understand how inconvenient the assistant and surgeon must be to each other, and that, too, when a restless and choking infant is the subject of operation. This valid objection applies equally to the operation as performed with the instruments invented by Dr. Cox and Mr. Dixon. But two other very serious objections to these instruments, as well as that recommended by Dr. Physic, are, 1st. the absence of any means for withdrawing the excised tonsil, which may fall into the œsophagus and be carried into the stomach, as is commonly the case, or into the larynx, and produce suffocation; and, 2d. the tonsil recedes, from the pressure necessary to adjust the ring.

In my first operations I was in the habit of using the forceps of Muzeux, and the curved bistoury, directing its cutting edge from below upwards, and from behind forwards, and though I consider it preferable to the knife of Chaque, or the strait buttoned bistoury used by Dupuytren and others, still I cannot consider it as a convenient instrument; for, in all cases where two separate instruments are used, an assistant is necessary to command the spatula, the disadvantages of which have been explained above. But there is another objection to this curved knife, viz. the difficulty of giving it a keen edge. From a conviction of the facts now mentioned, I ceased to use this instrument, and in its stead had recourse to the curved scissors, one blade of which was terminated by a vertical bar, and both furnished, on the concave side, with two small vertical prongs. By the bar, the tonsil is prevented from receding during the approximation of the blades; and by the prongs, the excised portion is secured and extracted, without any danger of falling into the œsophagus or larynx. I have universally found this instrument to answer the desired end, except where the tonsil about to be removed was very large and hard; for, in such cases, I have been annoyed by the difficulty of approximating the blades, and in a few cases the tonsil has passed outwards, from the pressure applied, and but a very thin slice has been removed; but when the tonsil is soft, as in children, I prefer this instrument to all others.

With the view of supplying the defect of the scissors now described, I have invented an instrument, to which I shall take the liberty of attaching the name *tonsiltome*. This instrument is delineated in the plate. It combines, as may be seen, the advantages of the hook, ring, and concealed knife, cutting on the most correct principle; at the same time it can be used with one hand, while with the spatula in the other, the tongue and jaw are depressed. I have now frequently used this instrument, and from the facility and safety I have experienced in the performance of the operation, I am strongly disposed to believe that it fulfills every possible indication. This instrument is nine or ten inches in length; by separating the handles, the ring opens; when they are approximated, they remain so, through the medium of the curved spring, whose influence can be destroyed by drawing its extremity towards the handle. According to the tonsil about to be removed, the superior handle can be screwed upwards, so as to give the thumb more purchase in pushing the blade onwards.—EDITOR.

REVIEW.

Treatise on Puerperal Peritonitis, by A. C. BAUDELOCQUE, *to which was awarded the Prize by the Royal Society of Medicine, of Bordeaux. Translated from the French, by* G. S. BEDFORD, M. D., *Lecturer on Obstetrics, &c. in New-York.*

We had intended to notice this valuable work at an earlier period, for when reading it, it struck us as presenting a body of facts on the subject of which it treats, too important to be neglected by the medical practitioners of this country.—Doctor Baudelocque, it appears, has enjoyed the best opportunities of observing the dreadful disease, and he has furnished us with a statement of facts, which, in our opinion, will amply compensate the practitioner for the time he may devote in perusing them. A remarkable feature in this book, and one, which it seems to us, should always add weight to the reflections of an author, is, that M. Baudelocque enters upon his task without any preconceived theory, untrammelled by prejudice, and ready to admit any inference deduced from philosophical reasoning. His object was truth, and how highly he appreciated the importance of the undertaking, may be imagined from the following remarks in his introduction:—"On several different occasions, I had determined to publish my observations on puerperal peritonitis; but the opinion which I entertained with regard to the nature and causes of this disease, differed so widely from the prevailing views of practitioners, that, fearing to oppose them, and, at the same time, conceiving the possibility of my having erred in the conclusions I had drawn, I deferred the task which I had proposed to myself. In fine, I was informed of the question proposed by the Royal Society of Bordeaux, and was unwilling to allow so favourable an occasion to pass without submitting my views to the examination of the honourable men, who would be perfectly unbiased in their judgment. I was happy to have it in my power, to subject them to this test, being determined not to publish them, if they did not receive the approbation of the Society. I commenced the undertaking; but before reducing my opinions to writing I imposed upon myself the obligation of reading all that had been written in reference to the subject, which I was about to treat. The valuable library of professor Deneux, furnished me with ample resources, and, among the French, Latin, and English works, I had abundant opportunity of acquainting myself with the different views of authors. I soon arrived at the conviction, that puerperal peritonitis, admitted of but little new research, and, that, if we were in want of a good practical work on this subject, we must attribute it, not to any deficiency of materials, but to the prevailing medical doctrines, which had rejected or consigned to oblivion, the excellent remarks and judicious precepts of our predecessors. As my observations accord in many particulars, with those which they have made, I am happy to have it in my power to sustain my opinions on their authority."

Before entering farther on the merits of the work before us, we think it our duty to say a word in reference to the translation. It is the observation of a distinguished man, and it certainly is true, that the great merit of a translation, consists in making it so that the reader will forget that it is a translation. That this is a difficult point to accomplish, and that we very rarely find it successfully effected, will not be denied, when we glance at some of the translations which have been made in this country. But, as far as we can judge, Dr. Bedford has evinced considerable taste, in the very elegant and classic manner in which he has presented us with Dr. Baudelocque's work, in our own tongue. The translation is accurate, and free from the numerous idioms ordinarily found in books of this description. We also think that the translator deserves the thanks of the profession, for the selection he has made of Dr. Baudelocque's work, for, perhaps, of all the books written on this subject, there will be found but few so valuable to the practitioner ; and it enjoys an additional advantage, which is, that the author has availed himself of all the improvements of modern physiology.

The chapter devoted to the etiology of puerperal peritonitis, has received especial attention, and the author appears to have examined with candor, all that has been written respecting the causes and nature of this disease. He appeals to the tribunals of reason, and, as confirmatory of this appeal, adduces abundant facts to demonstrate the errors accredited for so long a period. The author very justly states, that we have paid too little attention to the causes and particular circumstances under which diseases are developed. To how many errors, he asks, are we not exposed, in the treatment of diseases, when we neglect their etiology?

Medical men, however, begin now to feel the necessity of considering the causes of disease ; and the salutary influence which this consideration will exert over its treatment, is now better understood.

Certain writers have contended, that puerperal peritonitis is frequently produced by the changes effected in the fluids of the female, during pregnancy. Dr. Baudelocque, admits that these changes do in fact exist, but he does not accept the explanation given of this change by the partizans of milky metastasis, who state that : "As soon as the female has conceived, a change takes place in her humors. There is discovered in the blood a portion of milk, which is carried to the uterus for the nourishment of the child. The excess, deviation, and sometimes the bad quality of the milk, are the sources of nearly all the diseases that occur during pregnancy, and the period of confinement."

Dr. Baudelocque rebuts this proposition in the following manner :—"If we are not permitted to doubt the existence of this change in the fluids, of this cachexy, we discard, at least, the explanation given of its nature by Puzos, and other partizans of milky metastasis. The present improved state of physiology, will not permit us to believe that milk can be formed in the blood without the agency of a secretory organ. It is very evident that the mammæ are the organs by which the milk is secreted, and that these organs do not commence their proper function until after delivery. It would, indeed, be a feeble argument to oppose to this truth, the increase in volume of the breasts during pregnancy, particularly about the latter period, and the secretion of a whitish fluid, which possesses more or less the qualities of milk. These phenomena it appears to me, should be considered only as preparatory to the function with which these organs are soon to be charged."

The author then passes to the consideration of another question, more immediately connected with his subject. Can the change effected in the humors during pregnancy, have any agency in the production of puerperal peritonitis? He thinks it cannot, and in want of direct proof, founds his opinion in the following considerations: "This new condition of the fluids is connected with the existence of pregnancy; it is met with in all women, in all places, and at all periods; puerperal peritonitis, on the contrary, is not observed, at least equally frequent and dangerous, in all seasons, and in all countries; it does not attack indiscriminately all women. It would be gratuitously accusing nature, and it would exhibit ignorance of her conservative tendency, to believe that she should have associated with the accomplishment of one of her most important acts, a danger inherent even in the very essence of this act."

Sanguineous plethora (without being peculiar to pregnant women, very frequently accompanies gestation) has also been mentioned among the causes of this disease; but our author judiciously remarks, that its influence must at any rate be very inconsiderable; and he does not understand why it should favour the developement of peritonitis, rather than that of any other inflammatory affection.

Dr. Baudelocque says that he has had occasion to remark, that there is often an inflammation of the peritoneum soon after confinement, when an actual or latent chronic affection has existed during pregnancy. We extract the following case as a remarkable example of this inflammation, which, under similar circumstances, ordinarily yields with facility to the administration of proper remedies.

"The wife of one of my colleagues became pregnant for the second time, in the year 1824. She did not quit her bed, being obliged to remain there upon her right side, in consequence of a disease of her left femoral articulation. She was safely delivered at full term, after a labor of short duration. The two first days after delivery, all passed on well; the milk began to flow towards the breasts, when she was suddenly seized, about nine o'clock in the evening, with a chill, which lasted a quarter of an hour, followed by perspiration. The hypogastric region was slightly painful on pressure. She exhibited evidences of delirium; at times gay, and then assuming a melancholy character, which arrested more serious attention than the state of the abdomen. The next morning the delirium ceased, but the inflammation of the peritoneum had progressed. The hypogastrium was swollen, tender and very painful on pressure, particularly towards the left side of the fundus of the uterus; pulse frequent and corded; *thirst* intense; slight cephalalgia; suppression of the lochiæ, and of the secretion of milk. Eight ounces of blood were abstracted from the arm; two spoonsful of castor oil, and a purgative injection administered; an emollient cataplasm to the abdomen; diluting drinks. The employment of these means was followed by some relief. In the evening, the application of twenty-five leeches, ameliorated the condition of the abdomen, which was still more relieved on the following day, by the additional application of twelve leeches. The lochiæ reappeared; the breasts were enlarged; there was no *thirst*, but still the fever continued. A rigid diet for several days, together with diluting drinks, had no effect in diminishing the frequency of the pulse; there was no *appetite, notwithstanding* the satisfactory condition of the tongue. Of the cause of this we were ignorant. The patient coughed three or four times during the twenty-four hours; the respiration was somewhat more frequent than in its natural state, but this seemed to us to be accounted for by the frequency in the circulation. However, having had frequent occasion to observe pleurisy, after delivery, accompanied by no stronger characteristics than were here exhibited, I prevailed on the husband to explore with care the state of the chest; this was done at several different times by means of percussion and auscultation. He detected the existence of a slight pneumonia, occupying a portion of the inferior lobe of the right lung. Professor Fouquier recognized with us the pneumonia, which we all three attributed to the fact of the patient's having remained so long a period on her right side. Three small bleedings from the arm, placing the patient on her back, and a little to the left, soon re-established her health.

"The inflammation of the peritoneum, and the delirium, had suddenly manifested themselves without any apparent cause. My conviction is, that if the lungs had not been already diseased, these accidents would not have occurred. This opinion is founded on the fact, that they immediately ceased on the removal of the cause which had determined them."

"The suppression of the lochiæ has for a long time been considered as a very serious accident, and by many authors has been regarded as a prolific cause of puerperal peritonitis. Baudelocque, however, is of opinion that, when it occurs; it is more frequently the result than the cause of the disease. The suppression of the lochiæ is rarely complete; there is generally nothing more than a diminution, and still more commonly this diminution is not perceptible until several hours, and even days, after the appearance of the disease.—We sometimes observe that the course of the lochiæ is not deranged, and that it scarcely undergoes any change during the whole period of puerperal peritonitis.

"Authors, who attribute the disease to the suppression of the lochiæ, say in support of their opinion, that convalescence is preceded by the return of this evacuation. This does, indeed, sometimes occur, but not as frequently as is imagined. It is much more common to witness the cure before the lochiæ re-appear; and, moreover, their return does not appear to prove that their cessation was the cause rather than the effect of the disease. We see every day a violent disease causing the suppression of one or more of the secretions, which are not re-established until after a notable amendment. Thus, for example, a fever declares itself; immediately, the cutaneous, pulmonary transpiration, and mucous secretions are suspended; the breath is heated; the skin, tongue, and interior of the mouth become parched. After a variable period, an abundant perspiration is established; the tongue becomes moist, and the thirst disappears. In this instance, will it be said that the fever has been occasioned by the suppression of the cutaneous and pulmonary transpiration, and mucous secretions? Most certainly not. Nor are we more warranted in regarding the suppression of the lochiæ as the cause of peritonitis, when this suppression occurs after the developement of the disease."

The theory, which Mr. Baudelocque here opposes, has for a long time exerted a fatal influence over the treatment of puerperal peritonitis. How often, with the intention of re-establishing the lochial discharge, has not the use of excitants of every description, under the name of Emmenagogues, aggravated the disease, by throwing, as is vulgarly said, oil upon the fire?

Of all the causes capable of generating this phlegmasia there is none more active, in the opinion of our author, than a vitiated state of the atmosphere. He does not, indeed, deny hat cold climates and seasons predispose to the disease, and that sudden variations in the atmosphere, may determine it; but he contends that the influence of both one and the other have been exaggerated. By abundant facts, and frequent reference to the different European Hospitals, he demonstrates that when epidemic peritonitis proved most destructive to lying-in women, it was attributable to impure air.

Baudelocque asks in what the vitiation of the atmosphere consists, under the influence of which puerperal peritonitis is developed. He adds:—"The deleterious miasmata or particles, which float in the air, have been hitherto *inaccessible* to our senses; they are only known to us by their effects. It is well demonstrated that the vitiation of the air by a number of individuals does not consist merely in the diminution of its quantity of oxygen, the increase consequently of its proportion of nitrogen, and carbonic acid; there is yet something more than this, and this something has been by convention termed miasmata. The existence of these miasmatas, as I have just stated, is revealed to us only by their effects. Are there any circumstances, which increase or diminish their activity when developed, in considering *them* independently of their causes? This appears to me to be beyond all doubt. What are these circumstances? They may, perhaps, be traced to the atmosphere, to *its specific gravity*, its temperature, its hygrometrical and electrical states."

The *symptomatology* of this disease, has not been treated with less ability than the etiology; the symptoms are faithfully exposed; their relative importance appreciated, and the distinctive characters of the various affections, with *which it may* be confounded, established. The author makes particular mention of inflation, and states that if this phænomenon occurs so frequently in puerperal peritonitis, and so seldom accompanies peritonitis met with it at any other period of life, it is owing to the facility with which the abdominal parietes become distended after parturition.

In the chapter on *Complications*, the author presents us with a number of interesting and instructive cases. Of all the complications, he thinks pleurisy the most common. This complication is very dangerous, and often difficult to recognize. However, the oppression, and the frequency of the pulse, are greater than in any other case, as likewise are the pulsations of the jugular veins.

Another frequent complication of puerperal peritonitis, is inflammation of the womb, whether it exists primitively, or whether it declares itself simultaneously or consecutively.—Some authors have asserted that the disease commences ordinarily in the uterus, and is afterwards propagated to the peritoneum. This opinion, M. Baudelocque, does not believe to be tenable, for post mortem examinations demonstrate that most frequently, particularly when the disease is sporadic, the tissue of the uterus is in the most healthy condition, whilst the peritoneum exhibits unequivocal evidences of inflammation. Baudelocque, however, remarks, that when the tissue of the uterus is inflamed, it is very rare that the inflammation does not extend to its peritoneal tunic. The complication resulting from it, occasions but little difference in the principal symptoms; it is even frequently unknown.

The inflammation of the brain and its membranes, pericarditis, pneumonia, pulmonary catarrh, angina of the pharynx, larynx, and trachea, may accompany peritonitis. The complication with angina of the larynx and trachea was very frequent in *maism d'accouchement* during the year 1826.

Another complication, adds Baudelocque, frequently observed in this institution, is an inflammation of one or more of the synovial membranes. It is particularly in the articulation of the hand and knee that he has met with collections of pus in women, who have died of acute peritonitis. He has likewise seen it in the articulations of the elbow, shoulder, hip, and foot. It is very remarkable that this complication, very common in certain years, is quite rare in others, without our being able to assign any reason for this difference. Sometimes the signs of inflammation were evident during life; the patient complained of pain in the articulation; this pain was increased by pressure, and particularly by the slightest motion. Heat, swelling, and, in some instances, redness of the skin were observed. At other times, none of these symptoms were present, and yet one or more of the articulations were found filled with pus.

As regards the prognosis of the disease, our author believes that there are no signs more infallible than those arising from the state of the pulse. He is of opinion that the slackening of the pulse and its developement, will alone suffice to found hopes of recovery, when even there is no improvement in any of the other symptoms of the disease.

In the chapter on the *Treatment*, our author has furnished us with a statement of all the different therapeutic agents employed in this disease. Sanguineous evacuations have been prescribed by some practitioners, and recommended in all cases—by others, they have been considered useful only in particular circumstance—and again, there are some, who have rejected them altogether.

Baudelocque remarks:—"It is matter of surprise, that authors of acknowledged merit, should entertain such conflicting opinions with regard to the same remedy; some regarding sanguineous emissions as the only means of safety; others declaring them to be infallibly mortal. We cannot suspect the integrity of these men; they express themselves in the language of profound conviction. To what, therefore, are we to refer this difference of opinion? It is, no doubt, to be attributed to the fact that, having employed this remedy in peritoneal inflammations, the nature of which was not the same, and which were developed under different circumstances, they obtained different results. I am convinced from the perusal of authors and from my own experience that, in many cases, sanguineous evacuations are useful and indispensable; that in others they are injurious, and may prove fatal. In sporadic peritonitis, from external cause, blood-letting appears to me to be the most certain remedy we can prescribe. It will be the more efficacious in proportion as it is employed soon after the attack of the disease. Puerperal peritonitis, of all other phlegmasiæ, is that in which the stages succeed each other with most rapidity, and in which the first period is the shortest, particularly when the inflammation tends to fatal termination. It is likewise true, that when a disease of the peritoneum has reached a certain degree, it has to pass through particular stages, which are indispensable for the re-establishment of health, and that to do so, nature requires strength. If we destroy this strength when we cannot change the progress of the disease—or give it any other direction than that it has taken, we render the condition of the patient much more dangerous, and death will perhaps ensue; whereas, if we had not weakened the vital forces, nature would have triumphed. It should always be remembered that we are not only to consider the nature of a remedy, but likewise the proper occasion for using it. *Occasio præceps.*"

There are still other reasons, mentioned by Baudelocque, in favor of the use of sanguineous evacuations early and only during the first period. "The second period is characterized by the formation of an unnatural effusion. This liquid possesses a foul aspect; it is mingled with fibrinous particles, more or less abundant; sometimes it resembles pus. When the sanguineous evacuations have not arrested the phlegmasiæ in its first stage, when they have not succeeded in preventing the formation of this liquid, if we repeat them, we will favor the absorption, the transfer into the general circulation of this effused fluid, which will become the more dangerous as, at the same time, we diminish the forces of nature. Thus we will produce an effect doubly pernicious."

The influence of blood-letting, adds Baudelocque, on the absorbent system, has been demonstrated by the interesting experiments of M. Magendie. It was known to Van Suieten. *Meteundum forte videretur*, says he, *ne putrefacti facilior esset introitus in vinas depletas per sanguinas, missionem.*—(Commentar, v. 1, p. 722.)

There is great difference of opinion among authors as regards the quantity of blood to be abstracted in this disease.—Some contend that, in all cases in which the lancet is called for, we are to take away twenty-four ounces of blood; others again express alarm at such energetic treatment, and consider it fraught with danger. The following remarks by Baudelocque will no doubt be deemed prudent, and in most cases, very beneficial:—"I prefer in ordinary cases, to abstract twelve ounces of blood, and renew the bleeding at the end of two or three hours, if it be necessary. I am guided in this particular by the following rule: When the first bleeding has procured but little relief, if the pulse should continue corded and hard, and has not increased in frequency, I repeat the blood-letting, which I make more copious, and after a few hours, if it be required, I again have recourse to it. When, on the contrary, after the first bleeding, the pulse becomes more frequent, soft and smaller, at the same time that the pain and swelling of the abdomen increase, I am particular not to repeat the evacuation. The state of the pulse and abdomen are the only guides on which we are to depend."

Certain practitioners have preferred abstracting blood in this disease by means of leeches, and have advanced as an argument in their favor, that, in drawing blood from the capillary system, they abstract it directly from the diseased organ, by the communications which exist between the skin and subjacent parts. Baudelocque considers this communication remote, even when the peritoneum is inflamed in that portion of it which lines the anterior parietes of the abdomen, and it is very evident that it does not exist when the inflammation is seated in the broad ligament, uterus, intestines, &c. which is most frequently the case. In reference to this subject, he makes the following judicious remarks:

"Considered in a general manner, the employment of leeches possesses over bleeding from the arm, the advantage of a revulsion effected by the wounds or bites of these animals. But this advantage, when it exists, is counteracted by the cold which frequently accompanies their application, and by the difficulty of ascertaining the quantity of blood drawn. This quantity will vary singularly, according as the leeches are large or small, as they continue on for a longer or shorter period, and as the blood flows more or less abundantly after they have fallen off.

"I think that, in the majority of cases, bleeding from the arm is preferable to leeches, and that we should not employ these last, except when after having obtained, by general blood-letting, a considerable diminution in the symptoms, there remains pain in one or more points of the abdomen. Then, it will be proper to place leeches upon these points, which will prove more efficacious than the general bleeding in arresting the pains. Among persons of delicate constitution, we are permitted to have recourse to them from the commencement, particularly if the inflammation be *local*, of limited extent, and accompanied by slight fever; but we should employ them in sufficient quantity. We cannot expect any advantage from eight or ten leeches; we should use double, and often triple this number. *A fortiori*, they should be still more considerable when, from particular circumstances, we are obliged to abstain from general bleeding in a person who is robust, and treat the peritonites directly by leeches, then it will be necessary to use fifty or sixty at each application."

There is much truth in the above observations, and an adherence to the rules here laid down will result in great practical benefit to the patient. The lancet is a *potent remedial agent*, and when judiciously employed, *will* be found of the greatest advantage; but an error as regards its indication, will frequently occasion fatal consequences.

It must be remembered that M. Baudelocque divides peritonites into epidemic and sporadic; and that what has just been said with regard to sanguineous emissions, *is applicable* to the latter, to peritonites from external cause, which is developed under circumstances in which we cannot suspect any alteration in the fluids, other than that observed in all pregnant women. The particular treatment of this disease is predicated in the division which Baudelocque has made of it. He says: "As salutary as these evacuations may prove in sporadic cases, exactly in the same ratio do I consider them injurious in epidemic peritonites, especially in hospitals, in peritonites from internal causes. In this latter case, so far from procuring relief, they are ordinarily followed by greater frequency and smallness in the pulse, a more evident alteration of the features, and increased swelling of the abdomen. *I* have frequently noticed peritonites, confined to the hypogastrium, propagate itself rapidly to the entire peritoneum, after blood-letting."

Emetics have been recommended in the treatment of puerperal peritonites, and with some practitioners have proved successful. The greatest benefits seem to have been derived from the administration of ipecacuanha, and at one period, when the disease prevailed in Paris to an alarming extent, this remedy was followed by such happy results, that it was by some deemed a specific.

Baudelocque observes: "Whenever the tongue is pale, humid, and covered with a thick yellow or green paste, I am of opinion that it will prove very advantageous, particularly if it be followed by the use of laxatives. I would not limit the treatment to this remedy alone, unless its administration were followed by such a remarkable amendment, that but little remained to be done. I would employ the ipecacuanha rather to combat an accidental complication than to act against the peritonites itself.

"The cases in which it is proper are rare, and are principally met with in epidemics. Whether this remedy acts as an evacuant, and expels with the excreted matter a large portion of the deleterious principle that has generated the disease, or whether by imparting a revulsive movement to the economy, which occasions an advantageous change in the deranged functions, or by causing the spasm of the skin to cease, as Delaroche observes, it there directs the vital forces which had been concentrated in the interim, we cannot but admit that ipecacuanha has been attended with success, and will continue to prove advantageous when employed under proper circumstances."

The author thinks that purgative medicines in this disease will frequently prove useful. Experience is decidedly favorable to their use. It has, however, been urged, that the irritating action of purgatives will add to the inflammation of the peritoneum; this fear, Baudelocque considers entirely chimerical, unless very violent drastics be employed; and he is further of opinion that purgative medicines, which certainly have been too limited among lying-in women, are not sufficiently employed at the present day, and that they frequently offer precious resources against the inconveniences following accouchement.

The reader will find some observations of the highest practical importance, under the head of *Blisters.* It is but too true, that much harm is done by the incautious use of these agents. Blisters are very justly considered as among the most powerful revulsives, and hence the inexperienced practitioner, alarmed at the existence of an internal inflammation, has immediate recourse to the cantharides, under the idea that its effects are sovereign. Baudelocque says of them, in reference to peritonites: "Blisters, in my opinion, should not be applied to the abdomen, except when, in cases of effusion, we wish to favor its absorption. I think that it is proper to abstain from them at every other period, and, in my opinion, we should never make them a principal means of treatment."

The extraordinary fatality attending puerperal peritonites has caused medical men to reflect, and innumerable medicines have been proposed for a disease which, at different periods, has baffled all the resources of our art. Under some circumstances, certain medicines have been found to answer every purpose in arresting the ravages of this fatal malady; and, at other times, have proved altogether unavailing. The authors who furnish us with these statements, assure us that the disease did not vary in its character, that it presented the same symptoms, and that it was absolutely the same affection: to what then are we to attribute the success of particular medicines at one period, and their total failure at another? When puerperal peritonites raged with such destructive violence at the Hôtel-Dieu, in Paris, that the physicians despaired of affording any relief, and were on the point of abandoning their patients to their unhappy fate, *Doulcet*, a physician of the hospital, being present at the very moment in which a female, recently delivered, felt the first symptoms of puerperal peritonites, which commenced by vomiting, seized the indication which presented itself, and prescribed immediately fifteen grains of ipecacuanha, given in two doses, and the emetic was repeated next morning. This case succeeded, and ipecacuanha for some time proved effectual in subduing the disease. This was a period of triumph for the profession, and of joy to the unfortunate patients. But, alas! the enthusiasm was of short duration. It was soon found that the remedy was not specific, and that, in many instances, it was abortive.

Mercurial preparations have been employed, but, says Baudelocque, the honor of having proposed them as a principal means of treatment in puerperal peritonites, belongs entirely to Dr. Vandenzande, professor in the civil hospital of Anvers. On this subject, M. Baudelocque has the following:

"A patient, more fortunate than the rest, escaped the accidents of the acute period; the disease passed on to the chronic stage with effusion in the abdomen. Before having recourse to puncture, Dr. Vandenzande tried the effect of calomel, and the most triumphant success followed this attempt. He then conceived the idea of employing this remedy in the acute stage; and soon had an opportunity of testing it. He furnishes us with the following case:

"A female, aged twenty-seven years, of a temperament more phlegmatic than sanguineous, in the eighth month and a half of her pregnancy, and laboring under an intermittent fever, of which she had experienced five attacks, had been placed, when she entered the hospital, (10th of March, 1820,) in the large ward assigned to females. She had been two days delivered, after a severe labor of thirty-six hours, when her child, attacked by convulsions, expired under her eyes. Notwithstanding the different means employed in order to remove a violent nervous attack, which was repeated several times during the day, the patient, on the following morning, was evidently affected with a very dangerous peritoneal inflammation. Abdomen enlarged and painful; pulse small, quick, and corded; cheeks colored; eyes fixed and haggard, as in the most part of hysterical women; lochiæ suppressed; breasts not entirely empty; no evacuation since her accouchement. M. Vandenzande ordered powders composed of four grains of calomel, as much of the extract of henbane, and a quarter of a grain of the gummy extract of opium, to be taken every four hours; warm fomentations of the decoction of poppy heads, (an ounce to a pound of water,) applied with a flannel on the entire abdomen; barley-water as a drink, and some light broth for nourishment. In the evening, the patient had taken three powders. She had not vomited; the abdomen was inflated; the slightest pressure excited insupportable pain; the pulse, hard and small, exceeded one hundred and twenty; the least movement on the sides occasioned shrieks from the patient; the face was changed. The patient had not urinated, and the catheter was introduced; she took two more powders, and the fomentations were continued.

"The next morning, the second day of the disease, after a violent exacerbation of the pains and fever during the greater part of the night, the patient, about six o'clock in the morning, had two liquid and infectious evacuations, which debilitated her exceedingly; the abdomen was more developed than on the preceding day, and painful in its whole extent; skin dry and burning. Continuation of the powder every four hours, with half a grain of opium; demi-lavement every three hours, of a decoction of poppies, to which starch was added, with a view to calm the pain and prevent evacuations. In the evening, nearly the same state, no evacuation. The patient had taken three powders and three lavements, which had not been returned. In addition she took two powders, and an anodyne julep.

"Third day, the exacerbation was less violent; abdomen continued tumefied, but not so tense, and less painful; pulse small, softer, and less accelerated; skin moist, tongue humid, thirst diminished. There was no liquid evacuation. Continuation, as on the preceding day, of the powders and lavements. The fomentations were replaced by a liniment, composed of two ounces of the oil of henbane, half an ounce of ammonia and of the tincture of thebes, and two drachms of double mercurial ointment. In the evening, the patient complained of a copperish taste in her mouth; and it was observed, with much satisfaction, that the gums were red and tumefied, and the breath impregnated with an odor peculiar to mercury. The abdomen was now less painful and tense, the mammæ began to resume their usual size; remarkable diminution in the fever. The patient demanded permission to eat some *soupe à la bière*, with the yolk of an egg and sugar; she was told she could have it on the following day. She was allowed a stronger broth. One powder and an anodyne julep, with an ounce of the syrup of white poppies were ordered.

"Fourth day. Breasts filled with milk; gums much swollen; slight perspiration; very little pain in the abdomen. The frictions with the volatile liniment continued; astringent gargle; a decoction of lichen to be taken by spoonsful; more generous regimen; rice soup; two eggs, &c. Convalescence was established. In a few days the cure was complete. The patient had taken fifty-six grains of calomel, and yet the salivation was of but short continuance."

M. Baudelocque says he has always remarked, as Vandenzande states, salivation to be a certain indication of convalescence.

The author cites a number of cases in which this treatment has proved successful; and we cordially recommend their perusal to such practitioners as may feel anxious to become acquainted with many interesting facts in connexion with this subject.

We do not think that we owe any apology for the length of this review. The subject is highly important, and we cannot doubt but that Baudelocque will become a standard work among professional men in this country.

GLEANINGS FROM FOREIGN JOURNALS.

Experimental Researches, shewing upon what bases should be founded the diagnostic signs of diseases of the heart and circulation, by Marc D'Espine. *Read before the Academy Royal of Medicine, July* 29, 1831.

When a physician is called upon to note all the symptoms which present themselves in any organic affection, he is obliged to pass in review all the phenomena by which the organ or its functions are made manifest to him, and to determine all the changes which have taken place in them. After this he should ascertain if these phenomena which do not exist in a state of health, have occurred since the appearance of the disease. In the third place, he should run over the other organs of the body, and note any changes which they have undergone. These changes are often to be considered as new symptoms, which although indirect, are not on that account the less valuable, because the constant appearance of a certain phenomenon in one disease, and its absence in others, is the best ground we can have for the formation of our diagnosis. It is also true, that indirect symptoms are more valuable than direct ones—as in diseases of the heart, violent pain is more rare than œdema of the lower extremities, although this latter symptom is the most indirect.—Chronic pulmonary catarrh, considered as a symptom of disease of the heart, is more in direct than œdema, since it cannot be explained by the circulation, and yet it is more constant than pain.

It is a difficult thing to give a correct definition of the term, symptom, but I will approach it as near as possible. *A symptom is such a modification of the common phenomena of an organ or its functions, that new phenomena are produced either in the diseased function, or in some other one of the animal economy.*

Taken in this its most extended acceptation, it remains to establish limits by which it tends insensibly to take two other significations. The dominant idea in this division, is, the constancy with which these symptoms present themselves. That one for example, which in a hundred cases, was present but once, twice or thrice, would forfeit its name of symptom, and become a mere accidental phenomenon; that which on the contrary was often observed, that is to say, sixty, seventy, or eighty times in a hundred cases, would be called a distinguishing sign, more especially if it were more or less rare in other affections. Lastly, a new choice might be made between the signs, and the most certain should be called pathognomonic. In this case we should banish entirely the word symptom, which is neither a phenomenon nor a sign.

The definition of the term, sign, as it is used in physiology, is still more difficult than that of symptom, because no precise ideas have yet been attached to it. A sign is a symptom, it is constant and certain, and this is all we are told about it.

I have thus followed the physician, from his first observations of the symptoms of a disease, to their conversion into signs, and then into pathognomonic signs, and have arrived at the period when he proposes to himself to give the symptomatology of the complaint. Before, however, he does this, and indeed before approaching the bedside of a patient, he should be perfectly well acquainted with all the phenomena, which in a state of health, the affected organ or its functions give rise to. This appears to me so important, that without it, there is no hope for the progress of the science. Before M. Laennec, who could describe the symptoms of phthisis *pulmonalis*? The direct symptoms were cough and expectoration, the indirect, certain and modifications of the perspiration, nutrition, and strength, and nothing more. Now, the catalogue is more than doubled by the discovery of new phenomena. The same observations will apply to diseases of the heart, the symptomatology of which M. Laennec has so much enriched.

After these preliminary observations, I will give in the first place,

The phenomena by which the circulation is made manifest to the senses of the physician.

Auscultation of the heart, and the attentive observation of the pulse, made in a great number of patients, in every variety of disease, have led me to the following results, which I do not hesitate to give as correct.

The ear, applied over the region of the heart, in a healthy man, perceives a series of double strokes, and each pair of strokes is separated from that which follows it, by an interval of silence longer than that which separates the two impulses, the one from the other.

The first impulse which is the strongest and loudest, gives a shock to the ear, the second, which is more clear and feeble, communicates commonly no such sensation.

These two impulses and the two intervals of repose, taken together, I have named, a rythm of the heart. Each one of the four elements which constitute it, takes its name in the following way. The two impulses are distinguished by the order of their appearance into first and second impulse; the intervals into great and lesser interval.

Each rythm of the heart, corresponds to an expansion of the pulse, from which it follows that if the pulse beat sixty times in the minute, the ear will count sixty rythms of the heart, in the same space of time.

The expansion of the pulse does not take place precisely at the same instant over every part of the body, but observes the following law. The nearer the artery is to the heart, the sooner will its expansion succeed to the first sound of that organ, and the further it is from the heart, the nearer will it be syncronous with its second sound. It will now at once be seen, how essential it is, to note the small interval of repose which separates the first from the second sound, since it is during this period that all the arterial contractions in the body are performed, M. Laennec has entirely neglected this circumstance, from the error he has fallen into of considering the pulse syncronous with the first sound. Bichat has the same false idea as a necessary consequence of his theory of the circulation. The incorrectness of this opinion, is now acknowledged by many besides Laennec. In a memoir read before the Academy Royal of Medicine, M. Pigneaux asserts very positively this error. M. Rochoux, in the article Pulse of the Dictionnaire de Médicine, has declared himself opposed to the opinion, that the pulse is syncronous with the heart, and he goes so far as to point out the difference between the time of the expansion of the carotid and the tibial arteries.

The departure from syncronism is so easily perceived, that it is unnecessary to relate in detail the modes of ascertaining it. It is sufficient to apply the ear over the region of the heart, whilst the hand is on the pulse—and it will be evident that the sensation is conveyed to the ear before it is to the fingers. This may be verified, if necessary, by selecting an individual in whom the circulation is so energetic that the sound of the heart and the expansion of the superficial arteries can be well marked. Feel the radial or the tibial arteries during the auscultation, and it will be seen at once, that if the stroke of the heart and that of the pulse occur together, it cannot be the first stroke of the former, but is the second which is heard. When the hand is removed and applied upon the origin of the carotid, the reverse will take place, and it will require very close attention not to confound the pulse with the first stroke of the heart. If the hand be placed on the radial artery, with the ear over the heart, the pulsation in the former will be felt after the first stroke and before the last one of the latter. In fact, the pulsation of the radial artery takes place about midway between the two strokes of the heart. These facts may be verified by placing the fingers of each hand on arteries distant from each other, and the difference in the times of the pulsations will readily be perceived. Independently of the value of this law as a simple truth, it can be applied to practice, and made subservient to clear up some question of diagnosis. In certain diseases where there are pulsations in epigastrio, it is important to ascertain, if they be only an extension of the action of the heart. This may be shown by auscultating the heart at the same time that the hand is applied to the seat of the pulsations. If they prove syncronous with the first stroke of the heart, it shews that they are a mere extension of its action, but if not, is either the celiac or the abdominal aorta which is in fault. I have several times ascertained this fact without difficulty. There is another case in which a knowledge of the foregoing facts might be of the greatest service. I refer to a case in which it may be necessary to decide whether an aneurismal tumor situated beneath the clavical, appertain to the aorta, or to one of its branches, the subclavian or the carotid. Perhaps in the first case, we might learn something by touching at the same time the tumor, and the artery of the sound side. What I have here thrown out, is merely to draw attention to these facts, and not prejudge them.

2d. *Researches into the circumstances which connect the mechanism of the heart with the phenomena which result from the auscultation of that organ.*

In the preceding observations, I have shewn the manner in which the circulation manifests itself to the senses of the observer. In order to proceed regularly, I will commence by exposing the mechanism of the heart as it is shewn by observation upon living animals, and relate what I have learned from auscultation practised upon them. I will then relate the experiments by which I have ascertained the coincidences which exist between the internal phenomena and the various sounds. I will then pass in review the opinions of various authors, and compare them the one with the other.

If the heart of a dog or a rabbit be exposed to view, two distinct movements may be seen, one of contraction of the two ventricles, and the other of dilatation. During the contraction, the heart feels hard, but during the dilation, *although* it is distended, it gives to the hand the feel of a bladder filled with liquid. These two sensations are so distinct that it is impossible to mistake them. I here only confirm a fact which has long been considered as determined in science. What I wish simply to remark is, that it was owing less to the change of volume than to the change of consistency that these two phenomena were perceptible. During these two movements, what was passing in the auricles? The greater number of physiologists think, that during the systole they dilate, and that during the diastole they contract. M. Laennec formerly was of this opinion, but he changed it after the appearance of the work of M. David Barry. The experiments of this physiologist, went to prove, that the auricles are a kind of receptacles or passive reservoirs, from which the ventricles draw the blood during the diastole. M. Laennec only admits the active contraction of the circular appendices, and it is to them alone he attributes the second stroke. M. Majendie has been led to consider the auricles as muscular sacks in their natural state, but purely passive and elastic, whenever their extensibility has been carried to a degree greater than common, by the presence of an unusual quantity of blood. This celebrated man, says he, has several times seen two contractions of the auricles for one of the ventricles.

With the knowledge of these conflicting opinions, I have come to the following conclusions. I have often tried to see the contraction of the auricles, but without success, as they always appeared to me perfectly immoveable. The auricular appendices alone seemed to contract, but their dilatation I could not see distinctly. After viewing this, I wished to touch it in order to ascertain if this latter sense would not discover something which had escaped the former, I took hold of the auricles with my hand in such a manner as to exclude the ventricles, so that their movements should not lead me into error, and I was not able to perceive any motion except in the vicinity of the auricular appendices. These appendices sometimes contract themselves together with the heart, and then the contractions correspond with the dilatations of the heart and *vice versa.* Sometimes, however, it is seen that there are two or three contractions of the appendices to one of the heart, and then these movements appear incomplete, and as it were vermicular. I ought to remark that I do not admit the dilatation of the appendices, except, as a necessary consequence of their contraction, inasmuch as I have never been able to ascertain it, either by the sight or the touch. The two movements of the ventricles were clear, sudden and circumscribed, and imparted to the hand the feeling of a shock, whilst those of the appendices, particularly when in harmony with the action of the ventricles, were so soft and trifling, that I could not believe they could give rise to the sound which struck upon the ear when applied to the thorax. To assure myself of the truth of what I have related I did not confine myself to a single experiment, but sacrificed many animals in the research. The movements of the heart as they are observed in dogs, and rabbits, should be divided into two periods. In the first period, which corresponds to the time during which the respiration is going on, and none of the principal functions are suspended, I have constantly observed the following: An instantaneous and violent contraction of the two ventricles, followed by a small interval of repose, after which comes immediately the simultaneous contraction of the two appendices, not at all comparable in intensity to that of the venticles. At the moment of this contraction, the ventricles dilate themselves as quickly as they had before contracted. This contraction of the appendices, and the dilatation of the ventricles were followed by a period of repose of longer duration than that which had preceded it, after which the ventricles recommenced their contractions, and the same things were repeated. This first period for observation, is never of very long continuance. In the second period which continues from the time of the first struggles of the animal until its death, every thing was different. Here phenomena might be found to verify all the assertions of authors. I have encountered the defect of harmony between the ventricles and the appendices which M. Magendie has noticed, and I have seen two or three contractions of the latter during a single rythm of the heart. At other times I have seen a very curious modification. The order of the repose was inverted, so that the lesser period took place after the contractions of the appendices, and the greater after that of the ventricles, so that I was inclined to consider the auricular contraction as anterior to that of the ventricles, and we see that it is in this manner Harvey has described the action of the heart. By degrees considerable intervals take place between each rythm, and the animal dies; after which, for a certain time, there is an undulatory motion in place of the violent contractions.—These facts being known, it is easy to understand the reason of their being so many different opinions amongst authors. They arise from the period chosen to make the observations.

Having stated the mechanism of the heart in these animals, let us see what we have learned from auscultation and the pulse. It is easy to believe that these would present the same phenomena as in man. Thus we see in a dog the same divisions of the rythm as in man, a sound, a brief repose, a second sound, a longer repose, and so of the rest. The pulse is, in general, more frequent than in man. In four dogs which I sacrificed, the least number of pulsations was fifty in a minute, the greatest, one hundred and twenty, to one hundred and thirty. The pulse beat evidently in the lesser interval, that is to say, after the first sound and after the repose. I am not singular in this assertion, as my colleagues and friends who assisted me in my experiments, were perfectly satisfied of the fact. Amongst these, I may mention, M. M. Poiseilluie & Robertson, M. M. Maunoir, Piett & Thevenin, students of medicine. The great rapidity of the circulation in the rabbit, rendered any observations upon it very difficult to be made.—The pulsations were two hundred and fifty in a minute, and yet we could distinguish in the rythm of the heart, the two strokes, consequently the difference in the length of the two intervals. It was only by means of auscultating the heart, that I could count the two hundred and fifty pulsations, as the superficial arteries were two small to distinguish their movements with precision.

It is upon the foregoing facts, that I base the subdivision which I am about to make. This subject, as it at once will be seen, should be divided into two parts; the first which consists in the detection of coincidences; the second, which has for its end, the relation of cause and effect. It does not follow that because one fact succeeds another, they therefore stand to each other in the relation of cause and effect. There might be a third or a fourth fact which equally coincided. I believe that in the prosecution of those sciences which are founded upon facts, one can not do better than to proceed with slowness and caution. I therefore, in the first place, ask myself what are the movements which take place during the first stroke of the heart, and what during the second. After having resolved this first problem, I endeavored to ascertain the cause, that is to say, which of the coincidences can be considered as the cause, and which as the effect. If there be but one, the matter is settled; but if there be several coincidences, the question arises, which is the most probable one. In default of a certainty, a probability has always a certain value in the prosecution of any science.

Before proceeding further, I should honestly avow, that I have drawn from the foregoing facts, arguments in favor of preconceived opinions. I have more than once compared in my mind, the facts which have been furnished me on the one hand by auscultation and on the other, by the inspection of the mechanism of the heart in the living animal, and have been forcibly impressed with the striking coincidence which existed between them. In auscultation, I have observed, first a slight sound, a short silence, a second sound, a longer silence. In examining the movements of the heart, I have observed a ventricular contraction, a period of repose, a contraction of the appendices, simultaneous with a quick dilatation of the ventricles, then a longer repose; I have therefore placed these two series of facts in the order in which they have been observed. Now I ask, is it not clear that if the two lesser intervals of repose coincide with each other, that the two greater intervals should also take place at the same time, does it not follow, that the first sound occurs during the contraction of the ventricles, and the second whilst the appendices are contracting, and the ventricles dilating. This reasoning is based upon the fact, that the sounds must correspond to the movements, and not to the repose of the organ.

My experiments were made in the following manner, after having laid bare the crural artery of a dog, so that its pulsations were easily felt, I rapidly cut away the ribs which covered the heart, opened the pericardium, and took the two ventricles in my hand, and with the other hand placed on the crural artery, I found that the ventricular contractions preceeded those of the pulse, and that the dilatations followed those of the artery. Moreover, the intervals of repose were the same between the first sound, and the pulse on the one part, and the pulse and the second sound on the other. I have therefore concluded, *that the first sound takes place during the contraction and the second during the dilatation of the ventricles.* I madethis experiment during the last winter, in the Cabinet of M. Magendie, *in the* presence of my friends, M. M. Poiseuille and Robertson, who were convinced of the correctness of the facts I have recorded. Sometime afterwards I made at the *Pitié*, a second experiment upon two dogs, which completely verified the foregoing observations. After having done so, I took advantage of the life left in the animals, to experiment upon the action of the auricles. It was however in vain, that my eyes remained fixed upon them, for I could discover neither contraction nor dilatation. I tried the sense of touch, but they appeared perfectly inert, the appendices alone beating during the dilatation of the ventricles. I took *them* between my fingers, and could perceive a contraction, but it seemed too slight to cause the sound heard in auscultation; Then came the intervals of repose which put an end to the experiment, and the dog died about 12 minutes after the opening of the thorax. The same experiments were made upon several other dogs, and with the like results; and I considered them too well established to need the sacrifice of any more animals.

Before drawing general conclusions from these experiments, I shall ask, if it be proper to draw inferences from them, as to what takes place in the human economy. The identity which experimental physiology has established between the functions of the dog, and other mammifirous animals, and man himself, might authorize me to make the comparison, but there is another reason which in this case makes it doubly proper. This is, that auscultation and the observation of the pulse in the animals I have mentioned, furnish us with the same phenomena as those seen in man, and with the same agreement between these phenomena, such as the same rythm of the heart, and the same coincidence between the pulse and the stroke of this organ. From the foregoing experiments, I have come to the following conclusions: *The first sound of the heart takes place during the contraction of the ventricles, striking against the thorax, and driving the blood into the aorta and pulmonary arteries. The slight interval of repose which succeeds this first stroke is synchronous with that which follows the contraction of the* *ventricles. The second stroke is heard during the double phenomena of the contraction of the auricles and the dilatation of the ventricles, that is to say, during the passage of the blood from the auricles into the ventricles. Finally, the long interval of silence takes place during the repose which is observed after the dilatation of the ventricles.*

We will now consider each of the *bruits* separately, and then endeavor to find amongst the phenomena which coincide in time, those which ought to be considered in the light of causes.

The first *bruit* coincides with the contraction of the ventricles, with the passage of the blood into the aorta, and the pulmonary arteries, and with the impulse of the point of the heart against the parietes of the thorax. This is all which takes place during the first *bruit*. From these three phenomena, we should distinguish the passage of the blood into the preceding arteries, because it is difficult to understand how a liquid, forcibly thrown into these tubes in the direction which it is, should not glide upon their parietes without imparting the shock which it does. It is, in fact, can scarcely be comprehended how this phenomenon can give rise to such a powerful, instantaneous and distinct sound. The other two phenomena are now to be considered. If we reflect that the shock against the walls of the thorax has no correspondent during the second *bruit*, and yet that the analogy of *bruits* leads us to suppose that there must be a correspondent analogy between the causes which produce them, it is clear that we must adopt the contraction of the ventricles as the cause of the first *bruit*. To these reasons may be joined, others drawn from the sufficiency of the phenomenon to explain the sound. In fact, muscular contraction itself will give rise to a bruit which may be distinguished by the stethescope. This sound, it is true, is confused, and not at all circumscribed, whilst the contraction of the heart is rapid, and consequently produces a sound clear and circumscribed. The lesser interval of silence as we have already said, coincides with that cessation of action, which takes place after the contraction. Here absence of motion, is absence of noise, and absence of sound is absence of motion.

We now come to the most difficult question, the second *bruit*. Let us recollect what takes place during its continuance; the auricular appendices are contracting, and the ventricles dilating; the sigmoid valves are closed and prevent the regurgitation of the blood, from the aorta and pulmonary arteries. If the heart have here any movement of translation, it is so obscure as not to be perceptible against the walls of the thorax, consequently we can not here have a cause for the *bruit*. Amongst the different movements of the heart, the question arises, which is the most likely to produce the *bruit*. Before entering upon the discussion, it is proper to state, that there can be no positive proof produced upon the subject. In order to do this, it would be necessary to ausculitate separately, each motion of the heart, and at the same time, stop every motion, except to the one under consideration, a thing which is manifestly impossible: I believe however, that we can arrive at a very strong probability of the truth, by our observation. We will commence with the auricles; what I have said of their contractions, must be recollected, as well as the feebleness with which their appendices alone act upon the blood which passes into the ventricles, and that their movements have neither strength nor duration, and that in fact when they are enveloped in the hand, and their motion felt, we can scarcely believe it possible it can penetrate the parietes of the thorax, and be heard with all the clearness and strength of the second *bruit*, much less can the observer conceive that he has before his eyes, so energetic a phenomenon. It is nevertheless from auscultation that we derive our strongest proofs in favor of the contraction of the appendices. These proofs which I have never seen noticed by any one, not even by Laennec, are the following; In the greater number of healthy individuals, when we apply auscultation to the region of the heart, we observe the first *bruit* at its maximum in the spot which corresponds to the point of the heart, or a little above it. The second *bruit* is best heard just to the left of the sternum or else directly over it. There is another important fact, in some individuals who are affected with palpitations, and in others who are perfectly healthy, there are two distinct shocks against the walls of the thorax, one during the first, the other during the second bruit. The first strikes the hand at the point of the heart, the other at the spot I have designated as the maximum of the second bruit; moreover the ear when applied to this latter place, perceives the shock, and the *bruit* beginning and ending together. I verified this shock to M. Andrews in the case of a young man in the Pitié. It can easily be seen what conclusions will be drawn from these facts by those who place the cause of the second sound of the heart in the contraction of its auricles; I will now pass to the second coincidence. It is known that during the contraction of the ventricles, the movement of the heart passes towards its point, which is the only portion of it at liberty to change its place, and it is this portion which strikes against the side of the thorax. The anterior portion of the base of the heart is elongated by the contraction, and does not approach the walls of the thorax. It cannot be considered at all surprising that the ear should perceive the loudest sound in that place, where the heart approaches nearest to the walls of the thorax. In the dilatation of the ventricles, the point of the heart returns to its place, its base is dilated and enlarged by the quantity of blood which the ventricles contain, whilst the anterior parietes of these latter are forced forwards to the cartilages and that part of the sternum which corresponds to them, and there it is that the second sound is heard. It will easily be comprehended how a little increase of this movement could give the sensation of a shock which I have spoken of above. The explanation of this difficulty, resolves all which I have observed respecting the movement of dilatation in the ventricles. It certainly is much more in favor of the dilatation of the ventricles, than the contraction of the auricles. The forcible shock, the strong dilatation, the clearness and instantaneousness with which it is produced, are much more clearly explained by the hypothesis which places the cause of the second *bruit* in the dilatation of the ventricles, instead of in the contraction of the auricles, or their appendices.

There is yet a third opinion, as to the cause of the second *bruit*, given to the world a few months since, by Doctor Carswell, professor of Pathological Anatomy, in London. This opinion was founded upon observations made upon a case of aneurism of the aorta, with a tumour to the right of the sternum. The patient was in the Pitié, and I had also an opportunity of observing him. The heart gave no sensible shock against the side of the thorax. Auscultation afforded but feebly the accustomed bruits. As however, you approached the right side of the sternum, the two bruits became more clear, and when over the tumor, they were at their maximum. Moreover by observing carefully, and placing the hand on the tumor, an alternate shock and retreat could be perceived. I have this winter been witness to a similar occurence in the department of M. Rostan. Here it will be evident that as the aorta was so near to the surface, the ventricular *bruit* was more easily conveyed by this canal, than in could be by traversing the thick parietes of the ventricles as it does in ordinary cases. It is, however, very difficult to understand how the *bruit*, commonly attributed to the auricles, should more easily be transmitted by the tumor, than by the thorasic parietes, notwithstanding the distance and the two series of valves which separate them. This difficulty led Mr. Carswell to think that the second bruit was caused by the shock of the blood against the sigmoid valves, at the moment of the dilatation of the ventricles. The kind of retreating motion which was observed in the tumour, appeared to indicate the return of the shock. It appears to me that the whole thing may be explained upon the hypothesis of the dilatation of the ventricles; for if the sound be transmitted more easily by the canal of the aorta than through the walls of the heart, it is natural that the dilatation of the ventricles, should be transmitted in the same way as their contractions were. On the other hand, it would be difficult to account for many of the preceding facts, according to the theory of M. Carswell; how could we explain the shock against the thorax, during the second *bruit?* It would be necessary that the origin of the aorta was aneurismatic, as it could not otherwise have been impelled against the parietes of the thorax. Although I have not examined the bodies of those in whom I have observed this peculiarity, yet I have in several instances been enabled to satisfy myself that the aorta was in a state of integrity, although the ventricles were much enlarged. If it were the ventricles, which by their dilatation produced the shock, it makes that theory still more probable which considers them as common cause of the second sound; and furthermore, when the ear is placed over the seat of the impulse, the *bruit* and the shock are found to be synchronous. I will conclude this part of the discussion, by saying that of all the hypotheses which have been given to explain this second *bruit*, that one is entitled to the most credit, which reconciles the greatest number of facts; and it does appear to me that the dilatation of the ventricles possesses this advantage. The greater silence or interval is received as the cause of the period of repose which the heart experiences after the dilatation of the ventricles.

I have now arrived at the end of this memoir after having established a certain number of facts, relative either to the manner in which the circulation is outwardly manifested, or to the relation which these phenomena have to each other, and I have explained the agreement which exists between the mechanism of the heart, and the rythm furnished by its auscultation. The conclusions which I have drawn from my experiments, are the following:

1st. In a state of health, each rythm of the heart is *composed* of four distinct periods, and not of three, as Laennec has taught us. These periods come in the following order; a dull sound (*bruit sourd*,) or the first sound—a small interval of silence—th clear sound (*bruit clair*,) or second sound—and a long *interval* of silence.

2nd. In a state of health, we find that the maximum sound of the first *bruit* is heard, at or a little above the point where the heart strikes the thorax, and the maximum of the second *sound* is heard three inches higher, and to the right; in some persons at the left border of the sternum, in others, under the sternum itself.

3rd. In some individuals who have symptoms of diseases of the heart, in others who have merely palpitations, and in a third class who have no other symptoms of disease, besides the impulse against the thorax, which coincides with the first *bruit* we find a second shock which agrees with the second sound. In another case when the two shocks could not be felt in different places, they could each be perceived in the spot which corresponds with the first impulse.

4th. In some persons whose circulatory system appeared healthy, all the arterial expansions were felt during the lesser interval which succeeded the first *bruit.* This lesser interval has heretofore been considered as of little consequence or else neglected entirely.

5th. The arterial expansions are not synchronous, the one with the other, and the differences between them, seem to obey the following law; the nearer the artery is to the heart, the sooner does its expansion succeed to the premier *bruit*, the more distant it is, the longer is the interval between them. Independently of the importance of this law as an ascertained fact, it may serve as an important diagnostic mark.

6th. Direct and indirect experiments prove the following coincidences between the phenomena of auscultation, and the physiology of the heart. The first sound is heard during the contraction of the ventricles, the stroke of the heart against the thorax, and the expulsion of the blood in the aorta, and pulmonary artery. The lesser silence takes place at the end of the first *bruit*, and during the interval of repose which is observed at the end of the ventricular contractions. The second sound is heard during the double phenomena of the contraction of the auricles, and the dilatation of the ventricles; that is to say, during the passage of the blood from the auricles into the ventricles, during which time, the sigmoid valves are closed and prevent the reguegitation of the blood from the arteries. Finally the greater period of silence which succeeds the second *bruit*, coincides with the interval of repose at the completion of that *bruit*.

7th. If, after having studied all the coincidences, we proceed to consider the causes, we shall find that of all the circumstances which take place during the first *bruit*, the contraction of the ventricles, is that which has the best right to be considered as its cause. The lesser interval of silence, which follows it, is explained by the period of the hearts' repose, and of all the phenomena which coincide with the second *bruit*, the dilatation of the ventricles, is the only one which can render a complete reason for it, and be considered as producing it. The long interval of silence which succeeds it, is fully explained by the repose of the heart during its duration.

[*Archives Générale de Médecine, Tome XXVII.*]

DR. E. H. B. RITSCHER *on Infantile Pneumonia. Rust. Magazin für die gesammte Heilkunde. Tome XXXI, p.* 115.

This disease appears generally as the consequence of a nasal or pulmonary catarrh. Sometimes, however, there are no precursory symptoms. It generally prevails during a humid and cold atmosphere, when colds and pneumonias are prevalent among adults. Its pathogynomonic symptoms are, inflammatory fever, oppression of the chest and cough, and if these symptoms are not promptly relieved they are succeeded by drowsiness and suffocation.

Early in the disease a copious perspiration will prove *critical*; in the latter stage vomiting will produce a solution of it. The principal seat of the disease is in the pulmonary mucous tissue, and its nature is evidently inflammatory.

The author recognises two kinds of inflammation in mucous tissues: viz. one catarrhal, in which there is an increased secretion of mucus; in the other there is an inflammation and congestion of the proper tissue, or parenchyma of the membrane, which last M. Ritscher thinks is the pathological condition in infantile pneumonia.

The indication is to transfer the inflammation from the parenchyma to the mucous surface of the tissue affected, or in other words, to create the catarrhal inflammation. This the author accomplishes not with the ordinary remedies for the cure of inflammation. The medicines he uses are principally stibiated tartar, sal ammoniac, calomel, &c. He has relied *mostly* on active emetics.

The author thinks that they act neither as sudorifics nor revulsives, but that they have a peculiar or specific effect in this disease; he administers them throughout its whole course, as long as there is cough, difficult respiration, and drowsiness, and until the secretions are re-established.

As long as he can produce copious vomitings he does not despair of success; he conceives the phenomena which accompanies vomiting to be peculiarly beneficial. The emetics he relies most on, are stibiated tartar, ipecacuanha, and squills. When an active emetic has produced the desired catarrhal inflammation, he makes use of tartar emetic in small doses, plummer's powder, acetate of ammonia, and infusion of fennel seeds. When the patient relapses he recurs immediately to the emetics, and persists in their use until the cure is perfect.

In the administration of emetics he is guided solely by their effects. He has frequently prescribed six emetics in one day, without having observed any ill consequences result from so heroic a method of treatment.

When the pneumonia is complicated with encephalic irritation and congestion at the period of dentition, he applies a few leeches behind the ears, and pursues the emetic treatment with the happiest results.

M. Ritscher has made some observations to illustrate his general views of this disease; however it would have been more satisfactory had he taken pains to tell us how many children he has treated for its cure.

He informs us, that of those he treated with emetics none died; and on the contrary, every case in which vomiting was not induced, terminated fatally.

If our author had kept an accurate register of the circumstances which were observed in each case it would certainly have been more satisfactory, and it is to be lamented that there are many practitioners who cannot be convinced of the utility of figures in therapeutics.

DR. PAULI *on Delirium Tremens. Rust. Magazin für die gesammte Heilkunde. Tome XXX, p.* 387.

Delirium tremens is more frequent in the north of Germany, than in France and other meridianal countries. Dr. Pauli has in four years treated forty-three cases of this disease.

He divides it into three stages, viz.—1st, the forming; 2nd, that in which the disease is developed; 3d, that of its terminations. He conceives delirium tremens to consist in an erethism of the cerebral nerves with depression and torpor of the ganglionic nerves and those of the peripherry.

In treating this disease M. Pauli has been so successful, that in forty-three cases he has lost but one; and in twelve instances by attacking the disease in the first, or forming stage, he has prevented it from being established. Although emetics and absorbants have been much used in the onset of this disease he never has recourse to them; the medicines which he has found most successful are beef's gall and opium, which he prescribed in doses of three to six drachms of the former, dissolved in from four to six ounces of mint water, or in the same quantity of infusion of valerian or calamus aromaticus; the patient taking a small glass of brandy in the morning, and in the evening two grains of the watery extract of opium.

Under this treatment, in a few days, the evidences of gastric disturbance disappeared, the intestinal excretions became regular, the nights tranquil, and if no organic derangement existed the patient was speedily restored to health. The curative indications are as follows: 1st, to prevent sanguineous congestions in the abdominal viscera, more especially of the liver; to evacuate the intestinal canal of its morbid accumulations, which will cause a more regular transmission of blood, and thereby prevent cerebral congestions.

2d. To calm the erithism of the brain and nerves, and thereby cause sleep.

In order to fulfil the first indication we may use *purgatives*, such as sulphate of soda or magnesia, with or without the addition of stibiated tartar; they may be administered until six or eight alvine evacuations have been produced, which will ordinarily diminish the turgescence of the cerebral vessels. If there be much cerebral excitation we may apply from fifteen to twenty-five leeches to the temples, followed by the application of cloths dipped in cold water.

Dr. Pauli asserts that general bleeding is positively injurious, and that after it the debility and delirium are generally augmented.

The second indication, viz. to allay the erithism of the brain, and to calm the irritation of the nervous system is best accomplished by opium.

This medicine, says Dr. Pauli, is a specific for *delirium tremens*, and no other narcotic can be substituted for it with advantage; it should not be given in increasing doses as is recommended by many English, American, and German physicians. According to our author the best method of administering it is to give one grain of purified opium every two hours, in *substance* or in combination. When the pulse continues full, *frequent* and strong, and the bowels have become constipated, to each dose of opium we should add from twenty to twenty-five grains of sulphate of potash, at the same time continuing the cold applications to the head, by which means we avoid those cerebral irritations which generally follow the administration of opium.

If, after the lapse of sixteen or twenty-four hours, no remission of the symptoms be observed, and there is no disposition to sleep, the opium may be administered in two grain doses every four hours, with the above-mentioned combination if there is any necessity. This treatment should be persisted in day and night until sleep is induced, which generally accomplishes the cure.

Delirium tremens, in some cases, assumes a malignant character; the pulse sinks suddenly and becomes small and thready, the face hippocratic, the respiration difficult, and the skin covered with a cold clammy perspiration.

In this case the dose of opium should be increased to two grains every two hours, together with active stimulants, such as the roots of angelica and serpentaria; the flowers of arnica, carbonate of ammonia, ether, camphor, musk, and the essential oils; externally we should use sinapisms, blisters, spirituous lotions, liquid ammonia, and the oils of savin and cajeput.

Delirium tremens, treated in this manner, seldom endures more than four days; ordinarily the critical sleep occurs on the second or third day, and with it convalescence. On the 5th day the plurality of patients are capable of resuming their ordinary occupations.

In the cases treated by the author, the smallest quantity of opium necessary to produce a cure was ten grains, and the maximum thirty grains.

When after the first sleep the patient complains of weakness, inappetence, dreaming, and other symptoms which indicate irritation of the nervous system, we should continue to give opium in small doses and at long intervals, as one grain morning and evening. During the interval the patient should take tonic and anti-spasmodic medicines, such as an infusion of valerian, orange peel, quassia, &c. or the tincture of calamus aromaticus. By pursuing this mode of treatment the health of the patient will be speedily re-established.

Observations on Diseases of the Digestive Organs which prove quickly fatal. By DRS. BOILEAU *and* COLIN, *at Nancy.*

On the 25th of August, 1831, Dr. Colin and myself received an invitation from the Commissary of the Police, at Nancy, to state, by the examination of the body, the cause of the death of Charlotte Louyat, 20 years of age, living in the same city, in the suburbs St. Peter, No. 77; and of Barbara Flambeau, 65 years of age, the grandmother of the former, living in the suburbs, No. 91. These two individuals died with little preceding illness, and without medical aid. The only account we can give of their short illness is from the statements of persons strangers to the science.

Observations on Charlotte Louyat.—We were told that about the 14th or 15th of August, 1831, this girl was seized with vomiting, which lasted the whole day, but which did not prevent her following her usual occupations; that since that time she appeared low and listless; that she had dismal forebodings, but she continued to live as usual on a very irregular diet, eating a great quantity of stone fruit. This girl expected her monthly discharges about the 20th of August, but as they did not appear she endeavored to excite the flow of them by the use of hot wine; this appeared to excite such an intense thirst the coldest water was insufficient to quench it. At length, during the night of the 21st or 22nd, the menses appeared. On the morning of the 22d, Charlotte Louyat complained of violent colic pains; she was obliged to keep her bed; she was seen to change her position very frequently; a general chill came over her. At this time she was told that her grandmother had suddenly expired. The symptoms became more alarming, and she died the 22d of August, at 1, P. M. after eight or nine hours of apparent illness. There was no vomiting after the first day of her illness, and she was then thought to be but slightly *indisposed*. They could not tell us whether there had been any purging. Dr. Colin having arrived an hour and a half after she had ceased to give any signs of life, wished to assure himself if the death was real or only apparent, but after several trials the reality of the death was no longer doubtful.

Sectio Cadaveris. Made 23d of August, 3, P. M. 26 hours after death. External Appearances:—The en bon point was moderate; about an ounce of red frothy fluid flowed from the mouth; the posterior surface of the body upon which she had lain was covered with purple blotches. The *right arm* and fore arm presented very large spots of a dull purple color. A violet spot of an inch in breadth, and two inches in length, was seen on the right groin. The rest of the integuments appeared of the ordinary yellow tinge. The abdomen was tympanitic, and resounded on percussion.

The abdominal cavity.—The abdomen having been laid open there flowed out from the most depending part about four ounces of a bloody serum. The serous membrane of the stomach presented on its anterior surface little alteration. Near the smaller curvature it was red, and its vessels injected; the posterior surface was redder and more injected than on the anterior surface. Around the cardiac and pyloric orifices was seen a red discoloration with much vascular injection; the intestinal canal was generally distended with gas. The duodenum and jejunum examined exteriorly presented a purple appearance, much deeper in some parts than in others, with great fulness of vessels. The ileum slightly discolored in some parts, presented an arborescent appearance of a pink color. The mesentery was of a dark red, caused by the effusion of blood between its lamina. The lymphatic glands of the mesentery were not altered in size. The peritoneal covering of the ascending and transverse colon, with the corresponding mesentery nearly natural; the covering of the descending colon and rectum were much injected and ecchymosed; the descending mesocolon and mesorectum presented the same appearance, but the blood appeared to be diffused in their substance.

The stomach contained two lumbrici, and three or four spoonsful of a thick red homogeneous fluid; the mucous membrane was red, thick, and covered over its whole extent with a vascular arborescence of a deep red color, more marked at the cardiac orifice; it was softened, and easily detached when scraped, from the muscular coat nearly through its whole extent. The mucous membrane being removed, a beautiful blue arborescent appearance presented itself in the substance of the other coats of the stomach. The mucous membrane of the small intestines was red, sensibly softened, in some parts of a yellow tinge, in others natural, covered with a red pulpy substance similar to that found in the stomach. Eight lumbrici were found in the small intestines; one of them, of a large size, made many apparent spontaneous movements. The mucous membrane of the large intestines, examined through its whole extent, was little altered about the cecum or in the ascending and transverse colon; but it was red, and thickened in the descending and sigmoid flexure of the colon and rectum; it contained a small quantity of fæcal matter of a natural consistency, as well as two small lumbrici.

The bladder was small and contracted, and contained a few drops of a purulent fluid, its mucous membrane was thickened and red in some parts.

The uterus was larger than common, of the usual consistency, and presented, on being cut, a bluish structure, with small black points, formed by minute drops of blood, sprinkled on its cut surface.

The organs in the cavity of the thorax presented no remarkable lesions.

The head was not opened.

Examination of Barbara Flambeau, grandmother of Charlotte Louyat. This woman, as we have already mentioned, was 65 years of age. Although she had been affected with many diseases of the chest in the course of her life and had been subject to palpitation of the heart, she was to the time of her death rather fat. The people who lived with her, thought they remarked that since the 14th or 15th of August, she had a looseness with some colicky pains, but she continued her usual occupations. The 22d of August, about 2 o'clock in the morning, she had great pain in the back, colicky pains in the abdomen, with frequent alvine dejections. At 7, A. M. she got up and took her coffee with the appearance of an appetite. At 11, A. M. she was seized with trembling of her limbs and a sensation of great cold. At half past 12 she died.

Examination of the body, August 23d, 5, P. M., 28 1-2 hours after death.

External appearances.—The body was fat and muscular; the skin was covered with livid spots, the abdomen was lympamtic, and sonorous on percussion.

Abdominal cavity.—The parietes of the abdomen being cut, about four or five ounces of a dark red serum escaped. The stomach was very large, distended by a great quantity of gas; the small intestines were equally distended. The large intestines flattened, contained but little elastic fluid. The serous membrane of the stomach was red in its whole extent. The serous covering of the small intestines was likewise much reddened, tinged with yellow in some parts, in other, purple. The external membrane of the large intestines appeared little altered. The mucous membrane of the stomach was red through its whole extent, much deeper in some parts than in others, with an appearance of thickening; it did not appear to be softened as in the preceding case, nor was it detached by scraping. Washing it diminished but little the intensity of its color. The mucous membrane of the duodenum was much altered, it was red thickened, the valvulæ conniventes were tumid, of a fungoid appearance and softened; some of them were detached by rubbing, and appeared like the lees of wine. In the spaces between these folds, the mucous membrane was a little less red and altered. Similar lesions were found in the whole extent of the jejunum. The mucous membrane of the ilium was generally red, but without ulcerations. In the stomach and small intestines, a clear fluid of a dull red, and very fœtid, was discovered. This was collected with great care and put into a bottle, to be submitted to a chemical analysis, the results of which we shall give at the end of this observation. The internal membrane of the large intestines was but little altered. The pathological alterations terminated at the ileo-cæcal valve. There was no perforation of the digestive tube in its whole extent. The gastro-splenic and gastro-hepatic epiploon were red and injected. Blood was found effused between the layers of the mesentery. The whole of the great omentum was also injected. The spleen was but little altered, but the liver had undergone a very remarkable change; it was of the ordinary size, its exterior surface was as black as ebony. Incisions being made in all its parts, presented the same discoloration from which flowed a frothy liquid, like soap and water mixed with air; its structure was more friable than natural.

The Thorax.—The parenchymatous structure of the left lung was healthy, its serous membrane had contracted many adhesions with the correspondent pleura costalis. The substance of the right lung was still crepitant, and permeable to the air in its central portion; the circumference was very compact, its pleura pulmonalis adhered to all the surrounding parts, the corresponding pleura costalis, pericardium and diaphragm; this musculo-membranous partition appeared confounded with the right lung and liver. The heart was nearly double its natural size, but with little increase of thickness; the cavities, very large, were empty, and presented no alteration, likewise the origin of the great vessels.

Head.—The dura-mater little altered, the arachnoid generally transparent; through which the vessels of the pia-mater might be seen distended with black blood. The cerebral substance was of the ordinary consistency, and presented, on being cut, numerous spots of black blood. There was no fluid in the ventricles. The plexus choroides were injected with blood of the color of lees of wine.

Certificate given by M. P. Simounin, apothecary at Nancy, consisting of the chemical experiments made upon the fluid found in the digestive organs of Barbara Flambeau and of the results.

I, the undersigned, F. Simounin, apothecary at Nancy, having received from Dr. Colin a bottle containing a few ounces of a fluid which he stated he had taken from the digestive organs of a woman named B. Flambeau, whom he and Dr. Boileau had recently examined; I, by his request, and that of the commissary of police proceeded to examine in the following manner:

The bottle contained about six ounces of fluid of a chocolate color, muddy, viscid, and frothy, by the commotion caused by the disengagement of a quantity of gas sufficient to force the cork out of the bottle; and a smell of animal matter in the highest degree of putrefaction. I divided this liquid into two nearly equal portions, and proceeded to try upon one of them the following tests. Its viscidity prevented its running through a filter, or to allow the thicker parts to subside; I diluted it with several times its weight of distilled water, and globules of apparently an oily matter floated on the surface, and which I quickly discovered to be fat; placed on a filter, it became slightly opaque, of a dirty yellow color and deposited on the filter shreds of membrane and the fatty substance mentioned. The fluid sensibly reddened blue paper. Heated, a great quantity of albumen coagulated.—Tested successively with the water of Baryles, lime water, nitric acid, infusion of galls, liquid ammonia, sulphurretted hydrogen, hydrosulphate of ammonia, *ferro prussiate of potash*, and ammoniacal sulphate of copper; none of these re-agents produced any sensible change. The nitrate of silver threw down a copious precipitate of a dirty white color, insoluble in an excess of acid, soluble in ammonia. Wishing to ascertain if this precipitate was owing to free hydrochloric acid, or to hydrochlorates frequently found in the animal fluids, I put some of the fluid into a small glass cucurbit and distilled with a slight heat, dividing the products and trying them separately during the greatest part of the time of the operation. I only obtained a liquid strongly ammoniacal; it was only when the liquid in the cucurbit began to thicken that the product reddened turnsole paper; I continued the operation for some time to procure a sufficient quantity of the acid liquid, and to concentrate the fluid in the cucurbet. The acid fluid, the produce of the distillation reddened blue paper, had an ammoniacal smell, limpid as water, showed itself without any action upon the different re-agents used; the nitrate of silver produced no precipitate, and I thought I could attribute the acidity of the fluid to the acetic acid formed by the decomposition of the animal matter, I was perfectly assured of this, by saturating the acid with the subcarbonate of soda I obtained a salt presenting the characters of an alkaline acetate. The matter remaining in the cucurbit after the distillation, of the consistence of syrup, was diluted with a little distilled water, and filtered, to separate some albuminous flocculi, it had then a slight nauseous smell, and reddened strongly turnsole paper, although mixed as much as possible with the re-agents, the results were exactly the same as before. Wishing to assure myself whether the saline and organic substances in the liquid were not obstacles to the manifestations of the presence of poisonous matter; I mixed 0,0001 of arsenic, and deuto chloride of mercury with a quantity of the fluid, the presence of which was detected by the re-agents mentioned. The remainder of the liquid evaporated and perfectly dried, gave an extract of a chocolate color, breaking when cold, and softening at the fire like resins, and burning with a bright flame, without any other smell than that from combustion of animal matter, and without leaving any metallic traces upon a well cleaned plate of copper exposed to its vapor. After these experiments, repeated several times with all possible care, I think I may conclude that no metallic poison was found in the liquid given to me.

Nancy, August 28th, 1831.

The quickness and almost simultaneousness of the death of two individuals of the same family had excited the surprise of the suburbs and even of the town of Nancy. Although sufficient motives of interest or hatred could not be found to excite suspicions of poison, the police wished to be certain of this, and to know if, by opening the bodies of these individuals, the cause of their sudden and unforeseen death might be discovered. In consequence, the request being made, we proceeded to open the bodies.

In Charlotte Louyat we have found marks of inflammation of the stomach, with so great a softening of its mucous membrane that it was easily detached from the muscular coat. This alteration was, without doubt, the result of inflammation, the redness, swelling, and developement of the surrounding capillary vessels are incontestible proofs. This inflammation alone had produced disorganization sufficient to cause death. This event must have occurred more speedily as the inflammation attacked a greater number of organs at the same time. The internal membrane of the small intestines was much inflamed in some parts, in others little altered. It was the same in the large intestines. The bladder and uterus were also much affected. These lesions did not appear to us, on first opening the body, as the result of poison. Our opinion was founded upon the following reasons: if inflammations to such an extent had been occasioned by a deleterious substance, it must have been an irritating poison. The pathological alterations which such an agent would produce, should decrease by insensible degrees from the stomach to the end of the digestive tube; this is not what we found: the inflamed parts were separated by healthy portions of membrane.—The termination of the intestinal canal was more changed than in certain intermediate parts. In fact, it appeared to me, that a substance sufficiently active to kill, in a few hours, a healthy young girl, ought, for very strong reasons, to have destroyed all the worms found in the digestive tube, and we have seen that one of them is still vigorous, twenty-six hours after death. The idea of poison being laid aside, how were we to account for so sudden a death? The people had not failed to attribute it to cholera morbus. As for ourselves, we saw in this disease but an extremely violent inflammation of the digestive organs, which came on with very slight symptoms, gradually increased under the influence of improper diet, and by the use of hot wine, suddenly acquired such a degree of intensity that death speedily followed. It might be said that such a disease in a young subject, to make so rapid a progress, that something specific ought to be admitted amongst the causes which produced it. In this case, I should answer that I do not admit of any specific cause, having a mode of acting different from ordinary hygenianic modifiers; but I believe that the organic tissues are more irritable some years than in others, that the nervous system especially, continually excited by the electricity of the atmosphere, is very sensible to external and internal impressions, and reacts in the same degree. I also think that the vegetable productions of this year, have not attained sufficient maturity, thereby furnishing an unwholesome aliment, the effect of which is often hurtful to the mucous membranes, and its absorption furnishes chyle which modifies disadvantageously the composition of the blood; and secondly, that of the organs. It is to this double cause, the stimulus of an atmosphere continually electric, and the use of unhealthy food, that I attribute the disadvantageous predisposition in which the organs are found; such a predisposition, that the slightest occasional cause, is sufficient to excite the most violent, and quickly fatal inflammations. If the opening of the body of Charlotte Louyat left any suspicion of poison, it was not the same from the examination of Barbara Flambeau. In her we have seen marks of inflammation with disorganization in certain parts of the whole of the stomach and small intestines to their termination in the origin of the large intestines. It might be said, that the action of the poison could be traced until it was exhausted at the termination of the small intestines. Therefore we collected, with the greatest care, the whole of the substances contained in the stomach and small intestines, to have them submitted to a chemical analysis. M. Simounin, as able a chemist as a distinguished apothecary, was very willing to take charge of this analysis, which has been already given, and the result of which was, that no poisonous substance of a metalic nature was discovered in the digestive organs of Barbara Flambeau. If this woman had perished by narcotic poison, we should not have found such violent marks of inflammation in the abdominal viscera. An acrid poison of the vegetable kingdom would have communicated to the food or drink with which it was mixed, a taste sufficiently marked that Barbara Flambeau must have perceived it; thus we believe that we ought to lay aside all suspicion of poison, and consider the death as the result of an extremely violent inflammation of the digestive organs and their appendages. We will add to these observations the opening of an individual who died at the hospital of St. Charles, which took place in our presence, August 28th, 6, A. M. This man, who appeared about 45 years of age, had lived but a few hours after his arrival in this establishment. He still continued to work when he was suddenly seized with violent pain in the abdomen, which increased and was attended with frequent vomitings, which continued to his death, twenty-four or thirty-six hours after the first apparent invasion of the disease.

External appearances.—The skin of the ordinary color, the muscles well marked.

Abdomen.—In the abdominal cavity was found an effusion of a thick fluid, formed of fœcal matter. The exterior membrane of the stomach was little altered; the small intestines distended with gas, their serous membrane was of a rose color, with vascular injection over the greater part of its extent; there were some points of a livid color; one part alone presented a black spot. The external surface of the cœcum appeared very much altered;

at one point of the circumference of this intestine was seen a violet spot, thinned, and in the centre, a perforation of two or three lines in length, and one line in breadth. The rest of the exterior membrane of the large intestines was unequally affected. The mucous membrane of the stomach appeared slightly inflamed; the inner membrane of the duodenum was healthy. We perceived, in different parts of the ilium and jejunum, traces of inflammation. The mucous membrane of the cœcum was much altered; it was thickened in some parts, thinned in others, with an appearance of softening and of a livid color. In the centre of one of these softened spots, was seen the inner orifice of the perforation we have already mentioned, with thinness of its edges. The mucous membrane of the ascending colon was thickened so much as to appear as if the gut was strictured. In the transverse arch of the colon, tumefaction, with redness and softening of the mucous membrane were perceived. The descending and sigmoid flexure of the colon as well as the rectum offered analagous alterations. The surface of the liver was blue, the parenchymatous structure healthy; the gall-bladder was filled with bile of a deep saffron color. The spleen, the kidneys, and bladder, were in a normal state. This examination, coupled with the two preceding ones, tend to prove that in this year diseases slight in appearance, have a great tendency to a rapid progress and a fatal termination. This disposition does not belong exclusively to those organs which are enclosed in cavities, but is equally the same in external parts. Mr. G. B—— slightly wounded the right forefinger; pain came on, which made rapid progress; leeches were applied to the part, without producing any relief. A deep incision was made the whole length of the last phalanx, emollient baths, and cataplasms were used; the disease continued to increase, and quickly terminated in gangrene; the gangrene extended as far as the middle of the first phalanx, and there stopped. Amputation of the finger at the articulation between the first and second phalanges, was performed. Abscesses formed in the palm and back of the hand. The healing of the inflammation and amputation did not take place till the middle of July, two months and a half after the commencement of the disease. I have seen a great number of whitlows without ever having seen such a termination; what was the cause? Is it owing solely to an individual disposition or to general causes capable of producing such a modification in the organs that they are more easily affected, and that diseases have a greater tendency to fatal terminations? I am inclined to admit this opinion, not from the facts cited above, but from a great number of others which are analagous to them, amongst which I will relate the following. A lady, 25 or 26 years of age, was affected in the beginning of September, with vomiting and diarrhœa; these symptoms lasted two days; on the third day, they made great progress, the alvine dejections became very frequent and painful, and the patient soon expired. There ought not any longer to be doubts that this year has given a bad character to diseases; that we ought to take every possible precaution to withdraw the influence of hurtful causes, and to lay under contribution all which might be useful: it is to make this necessity be felt, of which we ourselves are convinced, that we have given publicity to the observations and to the reflections which they have suggested.

Monstrosities observed and described, by M. GEOFFREY ST. HILAIRE.

M. le Baron Cuvier has presented to the Academy of Sciences, during the present year, several monsters, which M. Geoffrey St. Hilaire has examined and described.

His first observations relate to a female child with two heads, born in the Pyrenees, which resembled very much that one which had, some time before, attracted so much attention under the name of *Ritta Christiana.* M. Geoffroy says that the anatomical details in the two cases were very much the same, except that in the last one there was a sort of appendix about the middle of the coxyx, which was a tumor of the integuments, where the crural vessels and nerves terminated. He says, "That if the atrophy which arrested this commencement of the developement of the legs had not thus exerted its influence, there would undoubtedly have been two pairs of inferior extremities."

Another double monster was observed at Salies, in the department of the Lower Pyrenees. This was two twins joined together at the pubis and ischium. M. Geoffroy ranges this monster in the genus which M. Dubreuil has named ischiadelphe.

The third case was that of a child born alive having four legs, which M. G. has described, and proposed for it the generic name of iléadelphe.

The fourth case was that of a calf born with two heads and two tails.—[*Bulletin des Sciences Medicales.*]

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Aneurism treated by puncture with the white hot needle.

Valpeau has of late been boasting of a discovery which he professes to have made, and has promised us the best results from it. It consists in puncturing arteries with the view of curing aneurisms. I knew an officer, who for some years had an aneurism, at the bend of his arm, which subsided after violent exercise of the limb, (playing rackets,) an event no doubt produced by inflammation excited in the parts affected, for subsequent to the exertion he was for some time unable to use the extremity in consequence of severe pain. This case led me to propose puncturing a similar aneurism, with a white hot needle, in a soldier, but Staff-Surgeons Miller and Melin, the former of whom had charge of the patient, would not accede to my proposition.

In August of the year 1826, I was visited by a woman who had an aneurism of the left carotid for seven years. The arterial dilitation was seated high up, and was as large as a moderate sized egg. I exhibited the patient to Staff-Surgeons Dease, Hume, Simpson, and many other officers of the medical staff, before whom I punctured the aneurism in twenty-six different places, with a white hot cataract needle.* The patient complained of severe pain during the operation, and for some days afterwards suffered from high inflammation, which however subsided, leaving a very considerable degree of induration. The tumor evidently became more flat, and the pulsation less vehement; but I lost the opportunity of seeing the result of the operation, for this poor woman, with her husband and family, left Maidstone, the place of her birth, and removed to Dover.

In January, 1827, Lieut. P. was bled in the temple for iritis. An aneurism of the vessel formed, to relieve which he applied to me. I punctured the trunk three times, with a red hot needle, on both sides of the aneurism, and the consequence was a perfect cure. This operation I twice repeated in 27; and once in 28. Staff-Surgeon Dawn witnessed the first Staff-Surgeon Clarke the second; Assistant Staff-Surgeon Ewing the third; and Assistant Staff-Surgeon Gullivar the last of these operations. I had constant opportunities, from my station as surgeon in charge of the Opthalmic Hospital, of repeating this operation, for aneurism of the trunk of the temporal artery was a common consequence of arteriotomy, (a remedy to which I was much addicted in some forms of opthalmia,) but I found that it was easily cured by pressure, therefore I thought it cruel to experiment more.

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* Valpeau, in his experiments, did not use a *heated* needle.

It was in the November of 27. as will be seen by a reference to my paper on Telangiectasis, p. 50. vol. 1. of this Journal, that used the white hot needle for the cure of an anastomosing aneurism, on the side of the infant William Henderson.

Before I recommended or performed this operation, I had tried it once unsuccessfully on the trunk of the sephena for varix of its branches. It should be mentioned, however, that I only transfixed the vein twice, and that symptoms of phlebitis prevented me repeating it.

I think this innovation may prove useful in cases of carotid aneurism consisting of a dilitation of the vessel, by causing an effusion of lymph into the cellular tissue surrounding the vessel, between its tunics, and on its interior, the consequence of which will be an increase in its resistance to the contraction of the heart, by the density it has acquired, and to entangle and consequently cause a coagulation of the blood, by the irregularity of its internal surface, caused by the lymphatic effusion.

Aneurism of the smaller arteries I believe may be cured by puncture of the trunks leading to them; but in such cases there is scarcely a fear of secondary hemorrhage following the application of the ligature. It may even be useful in aneurism of the brachial; but I have not the most remote idea that it will ever effect a cure of this disease in the larger trunks, to which after all the innovation should apply best, for it is in them that we fear secondary hemorrhage—the only valid objection to the best means we possess—the ligature.—EDITOR.

Varix of the Chord.

In page 239, of the first volume of this Journal, I mentioned that I had employed a truss, with a vertical sliding bar, for relieving the venous tumor of the groin. This I used with the same object which led surgeons to tie the vein. The principle it will appear I have successfully applied to varicocele.

Whilst in the British service I had constant opportunities of witnessing soldiers labouring under this disease. In a great majority of instances it was connected with hernia. Some of the men thus afflicted had not a truss applied because of the baneful effects supposed to accrue from the obstruction to the circulation. Others again had the truss adjusted and suffered no inconvenience. Thus I obtained one useful fact, viz. that a truss does not exercise the malignant influence attributed to it by some, when applied in varicocele; but this fact did not immediately serve any useful purpose, for about the same period I removed the greater part of a decayed venous plexus (as large as a lemon) from the left chord of a fine young officer who had served in the Burmese war, and then first experienced the disease which rapidly encreased and rendered his life miserable up to the period of the operation. On the following year I performed a similar operation on one of our staff surgeons, who had served in the peninsular war and afterwards in the Mediterranean. In this case the plexus was nearly as large as in the one just described. Since I arrived in this country I have repeated the operation twice, still the difficulty and severity of all these cases led me to seek after other means of relief. Reflecting on the principle upon which the sephena has been tied and divided for varix of the leg, and the efficacy of the truss in the venous tumor of the groin, and bearing also in mind that in the cases where hernia and varicocele were combined in the soldier, and where a truss had been applied without any regard to the latter, the varicocele was not aggravated as surgical authors have endeavored to prove it must be. I thought that from all these combined circumstances a well-adjusted truss might prove useful in this disease. This I mentioned to Dr. Hull, who informed me, that he and Dr. Sheldon had treated a case of hernia combined with varicocele, with a truss, and that both diseases were cured by it. A short time since a gentleman with a stupendous varicocele, having known that I had successfully operated on a case similar to his, called on me, requesting that I would operate on him. To be brief, I mentioned the facts now detailed, and requested him to try the application of the truss. Accordingly he acceded to my proposition, and met me by appointment at Dr. Hull's, who adjusted the instrument properly. This gentleman experienced immediate relief, in a few days went to the country, and when he returned, a short time since, he called on me, and on examination of the parts I found that the varicose tumor had been reduced at least one half, and he stated that from the moment the truss was applied he no longer suffered pain. It was my intention not to publish these facts until I had experimented further; but on consideration I have changed my mind. 1st. Because, if any good is to arise out of this innovation, let it commence as soon as possible. 2d. The application and the principle of cure may be adopted, or create in the mind of others some useful ideas respecting the treatment of this neglected disease; and 3d. If by further trials, others find that the plan proposed fails, both in giving relief and curing the disease, I am confident it will do no harm, for of this I have had ample experience.—EDITOR.

Torsion of the Arteries.

Of late years (since 1828) some of the surgeons of Paris, to wit Thiery, Amussat, Blandin, Valpeau, and Segulas, have been contending about torsion of the arteries, one or other of them claiming the fame of inventor, or revivor and perfector.

As may be seen from the following passage, Galen recommended torsion of the arteries:—"Quinimo si vas undè profluit altè sit demissum, certiùs ipsius tùm positum intelligat, tum etiam magnitudinem, prœtereà venane sit an arteria; post hœc, injecto unco, attollat ac modicè intorqueat."

Guy de Chaulice, as well as many others, also spoke of the torsion of the arteries. Therefore no person now living has any claims to the invention.

In December, 1826, with the assistance of Staff-Surgeon Rogers and Assistant-Surgeon Ford, I amputated the thigh, and suppressed the hemorrhage from all the vessels (four) except the femoral, by twisting the cut extremities in a square beaked forceps, furnished with a sliding bar and two nuts.

In April, 1827, I secured all the vessels save the *femoral in* the thigh of a boy in the same manner. Dr. Clarke, then physician to the Forces, Staff-Surgeon Dawn, Assistant Staff-Surgeon Ford, Assistant-Surgeon Breslin, of the 63d, and many other hospital surgeons, witnessed the operation.

In June, 1827, I removed a portion of the foot (see page 227, Vol. 1.) and secured the arteries by torsion.

In the same year I extirpated the testicle and secured the spermatic and other arteries by torsion. Staff-Surgeons Dawn and Clarke, Dr. Clark physician to the forces, all the officers of the medical staff, and Mr. Hamilton, surgeon of the 39th regiment, saw the operation performed.

In the latter end of the same year I amputated the fore-arm and secured the radial artery by torsion. Dr. Clarke, physician to the Forces, and all the officers of the medical staff on the station were present.

In July, 1828, I amputated the thigh and secured all the vessels save the femoral by torsion. Assistant Surgeons Hunt and Allen, and Dr. Ely assisted me in this operation.

I could cite many other cases where I pursued a similar course; but I never thought for a moment that I was the inventor of this method, or that it was so important as to have created such professional squabbles amongst the Parisian surgeons.

Having said so much, I shall merely observe that, by torsion of the smaller arteries, the surgeon may render his operations more expeditious, he may even experiment, as I did on such vessels as the radial; but after all, I believe it would be more surgeon-like to use the ligature. Finally, when a French experamentalist talks of curing aneurisms by this plan, I cannot help seeing with British, yet unprejudiced eyes, how great the contrast between him and our Hunter.—Editor.

Pressure of the Femoral Artery as a means of curing popliteal Aneurism.

John Hunter endeavored to cure a popliteal aneurism by compressing the femoral artery; however the expedient did not succeed, as the patient could not support the pain induced. In the *Dictionnaire des Sciences Médicales*, Richerand relates the case of a grocer where a cure was effected by compression of the femoral artery as it passes behind the adductor muscle.. And in the same article (Anevrysme) it is stated that Dubois has also been successful in a similar case. In the second volume of the Dublin Hospital Reports, the late Professor Todd described and delineated a species of truss which he was in the habit of using for the purpose of compressing the femoral artery, previous to the operation for popliteal aneurism, with the view of rendering the collateral circulation more complete. Subsequent to the period of his publication, he twice succeeded in completely curing the aneurism by this instrument, and to one of these cases I was an eye-witness. He also mentioned to me that Mr. Duggan, a surgeon of Dublin, had, in asimilar case, used the instrument with equal success. In the case which I saw Mr. Todd treat, the patient could not at first bear the pressure of the instrument for more than two hours at a time; but he gradually bore it longer, even to the extent of six hours. In the commencement the pressure was made but once a day; however towards the close of the week it was applied twice in twenty-four hours; and in this way, with the aid of a spare diet, occasional cathartics, small bleedings, and the exhibition of digitalis, the treatment was continued for thirteen days, when all pulsation in the aneurism ceased, and a perfect restoration ensued.

In December, 1826, I treated a case in this way and a cure took place; but the pulsation did not entirely cease until the twenty-seventh day. The greater slowness of the curative process in this case I attribute to the want of resolution in my patient, who would never allow the truss to be applied more than once in the day, and never for more than three hours at a time. If Sir William Blizzard had persevered thus, in the case related by him in the *Vol. III. Medical and Physical Journal*, he might have had equal success.

In June, 1827, I had an opportunity of examining the man on whom I effected this cure, he having sunk under fever. A tumor, hard and elastic, smaller than an egg, occupied the ham, and the femoral artery where the pressure had been made, was perfectly pervious. How then was the cure effected? By the pressure of the truss the current of blood through the artery was checked, therefore the blood in the aneurism coagulated in proportion as the pressure was continued.—EDITOR.

Double Femoral Artery.

On the 10th of January, 1830, I proceeded to amputate the thigh of Robert Allen. An assistant having made pressure on the artery as it passed over the pubis, I made two *flaps* and sawed the bone; but though the sections were completed with considerable rapidity, the patient lost far more than the usual quantity of blood. Therefore with all possible haste I sought for the femoral artery, which to my surprize did not bleed a drop, and appeared rather smaller than common. I now had the flaps turned considerably backwards and thus detected an artery larger than the radial, lying in the inferior border of the internal flap, (between the hamstring muscle,) and bleeding freely. This, as well as the vessel occupying the usual place of femoral, was tied, and the rest of the operation conducted in the usual manner.

On examination of the limb after injection, it appeared that the vessel occupying the course of the femoral passed on to constitute the posterior tibial, while the other, which lay between the hamstring muscles, represented the fibular.

Every anatomist is aware that, though rarely, the femoral artery bifurcates below Poupart's ligament; but this was not the case in Allen's limb, else the pressure made on the vessel, as it passed over the pubis, would have equally restrained the hemorrhage from both arteries. I cannot suppose that the second artery passed separately from the first over the pubis; for while the hemorrhage was going on the pressure was not confined to the usual trajet of the vessel. I am rather disposed to think that this second vessel must have passed out through the obturator or sciatic openings.

I have never observed, nor have I read of such a distribution.

This case has a practical bearing. 1st. It should remind the surgeon how necessary it is to be convinced that pressure on the femoral artery controls the pulsation of a propliteal aneurism before proceeding to operation. 2d. It strongly points out the safety of applying a tourniquet very loosely round the limb, (without influencing the circulation,) when we depend on pressure of the artery as it passes over the pubis, to check the circulation during amputation; for should such a distribution, as has been described exist, the tourniquet can be readily screwed so as to suspend the bleeding until the vessels are secured.—EDITOR.

REVIEW.

A Treatise on Cholera Morbus; or Researches on the Symptoms, Nature, and Treatment of this Disease, and on the different means of avoiding it, by F. G. BOISSEAU. *Translated from the French, by* G. S. BEDFORD, M. D., *Lecturer on Obstetrics, &c. in the City of New York. Published by* COLLINS *and* CO. 1832.

There has not been, in the history of medicine, a disease which has attracted so much notice, throughout the civilized world as the one of which the above work has given us the history. When other and equally fatal diseases are raging in any part of the globe, those portions of it which are and always have been free from them, rest satisfied in their previous exemption, without fearing the possibility of the pestilential gales being wafted to their shores. In this same light has cholera been viewed, and has been considered in Europe and America as an endemic disease peculiar to the East Indies. Latterly, however, it has proved itself to be confined to no particular country, and incapable of being arrested in its course either by climate, season, or sanitary measures. At a time, when it is yet distant from us, it is peculiarly incumbent upon the American physician to make himself perfectly well acquainted with its history, progress, and treatment, not only that he may be enabled to recognise it when he first may encounter it, but that he may be able to distinguish from it, the violent cases of our own cholera which every year occur throughout the country. The uncertainty which yet distracts the public mind as to its contagiousness, and as to the necessity of public sanitary measures to guard against its extension, and the destructive influence which such measures have upon the commerce and social intercourse of those places where they are inforced, renders this distinction of the very first importance; and that the physician who shall be bold enough to assert that he has met with a case of the real Indian spasmodic cholera, without having made himself perfectly acquainted with every thing which has been written upon the subject, and without having called into consultation the most distinguished of his professional brethren, will be held responsible by the public for all the ill consequences which may or might have resulted from his attempt to procure for himself notoriety.

M. Boisseau, the author of the work before us, was a member of the committee appointed by the French Academy of Medicine, on 25th January, 1831, for the purpose of collecting documents relative to the disease, designated in India and Russia under the name of *Cholera Morbus*, and charged with framing the regulations demanded by the Minister of Commerce. This committee was composed of some of the most distinguished medical men in France, and every thing which has emanated from such a body should command the greatest attention. All which has been written upon the subject came before them, and we are here presented with the results of their labors.

The work is divided into nine Chapters, and we regret that our limits will only permit us to give but a very brief outline of each. For every thing else we would recommend our readers to peruse the book for themselves, with an assurance they will not rise from it with a conviction that their time has been unprofitably employed.

CHAPTER I.—*Symptoms of Cholera Morbus.*

Sporadic cases of cholera morbus have been observed by the physicians of every age and country. Hippocrates has recorded three cases of it, the characteristic phenomena of which were:—"Vomiting and dejections of bile, pain, weakness of the voice, debility, hollowness of the orbits, and dull aspect of the eyes, abdominal convulsions, hiccough, cold, cramps in the legs, reddish color of the bile, anxiety, scanty and difficult micturation, in fine, the evacuation upwards and downwards of a sort of fecula." He does not mention any unfavorable prognosis, but this is done by Areteus of Cappadocia.

"According to Celsus the matter evacuated by the stomach and intestines in cholera is aqueous, the intestines swell and are painful, the legs and hands frequently contract, the thirst is urgent, and the patient faints away."

"Areteus is the first who has spoken of cholera in relation to the different ages, and strength of the constitution, and he has very judiciously treated of its connexion with the seasons."

Cœlius Aurelianus has given us a very correct description of the disease, and he adds that "it is generally violent and acute, and results from a spasm announced by pains in the epigastrium, abdomen, and intestine, and by stiffness of the articulations."

Alexander of Tralles has not described cholera, but says enough to shew that he was well acquainted with it.

From what has been said, it is evident that cholera was one of the diseases with which the Greek and Roman physicians were best acquainted, and our author now examines what has resulted from the researches of modern times.

Zacutus Lusitanus has given us some account of it. Jacob Bontius, a physician of Holland, has described the disease in Batavia in 1629. He ranks it with the Indian cholera, and says it is a very acute disease, caused by the heat and humidity of the atmosphere and the abuse of fruits. The pulse is very weak, respiration difficult and labored, extremities cold, a burning heat is felt internally, ardent thirst, great agitation, and when accompanied by cold and fetid perspiration, death is near at hand.

Thomas Sydenham says that the legitimate cholera prevailed in London in 1669. The symptoms were, vomiting and dejections of corrupted matter, violent intestinal pains, swelling and tension of the abdomen, cardialgia, thirst, heat, anxiety, frequent pulse, often small and irregular, nausea, sometimes colliquative perspiration, contractions of the arms and legs, fainting, coldness of the extremities, and frequently death in twenty-four hours.

Frederick Hoffman has reported several cases of sporadic cholera, which he collected in Germany. He thinks the seat of the disease is in the stomach and intestines, especially the duodenum, and is extended by irritation to the biliary ducts, heart, diaphragm, bladder, brain, and spinal marrow.

Sauvages observed spontaneous cholera, every year, at Montpellier. Amongst the symptoms, he mentions cramps in the calves of the legs and backs of the arms.

Quarin has observed the cholera at Vienna, in August and other months, when warm days were succeeded by cold nights.

M. J. S. Sengénesse, J. P. Frank, Pinel, Desgenettes, Fodére and M. Kuttinger, have each given us their observations upon cholera.

Our author says, "If we take a general survey of the facts which have just been reported, we cannot but be convinced that, since the time of Hippocrates to the present day, the cholera morbus has prevailed, at different periods, in Greece, in the Roman Empire, Indies, Modern Europe, England, Germany, Constantinople, Egypt, Italy, France, with nearly the same symptoms, sometimes more, sometimes less intense, assuming ordinarily a sporadic character, at times, however, epidemic.

"At first, vomiting of aliments in their original state, or half-digested; alvine dejections of fœcal matter, usually fetid, and sometimes the remains of the food; afterwards, vomiting and alvine discharges of yellow, greenish bile, of an aqueous liquid, whitish, or similar to the washings of meat, sometimes bloody, rarely brown, and at times resembling lees. Sensation of tension, weight, bearing down pain along the œsophagus, in the abdomen, epigastrium, at the base of the chest, in the region of the heart, in the iliac regions, and even in the limbs; internal heat, excessive thirst, invincible loathing of food; tumefaction or contraction of the abdomen, borborygms, flatulence; weakness of the voice; short, frequent, laborious respiration; imminent suffocation, and hiccough. Coldness of the skin, particularly at the extremities; general warm perspiration, afterwards cold, and sometimes fetid. Pulse small, and frequent, irregular, scarcely sensible, rarely full and frequent. Face emaciated, livid, seldom animated; redness of the conjunctiva, dimness of vision; cramps, contractions of the legs and thighs, stiffness of the articulations. At first, extreme agitation, then excessive feebleness, swooning, syncopy, wakefulness; at the end, vain efforts to vomit, violent tenesmus, sometimes vertigo and delirium. Most generally the duration of the disease is short—prompt recovery or rapid death. Such are the symptoms presented in the observations of which we have just read a summary, and such as will be remarked in the cases we are now about to mention."

"Among the physicians of English India, who have done most to advance our knowledge in relation to cholera morbus, M. J. Annesley is, without doubt, among the first.*

"He describes the disease in the following manner:—

"The subject experiences for some hours a sensation of oppression and anxiety, and a degree of heat *in epigastrio*. The symptoms increase more and more rapidly: the countenance which, at first, only expressed a discomfiture, soon gives evidences of anxiety and suffering. The pulse is generally small, and always concentrated. Such are the phenomena of the first period, or that of invasion.

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* *Treatise on the Epidemic Cholera of India*, London, 1831.

"Occasionally at the same time that these symptoms become manifest, and always after them, the patient complains of sickness of stomach, and a painful sensation, which appears to extend through the whole digestive tube. To these derangements soon succeed copious and frequent evacuation by vomiting and purging, a sensation of vacuity, prostration, inanition, and irregular spasmodic contractions, painful cramps in the muscles of the superior and inferior extremities. These evacuations are composed, in great part, of the matter contained in the stomach and remainder of the digestive tube before the disease. In consequence of their abundance, and the sensation of depletion which succeeds them, it appears to the patient that the whole contents of the digestive tube have been expelled.

"The spasms gradually cease to augment, principally in the extremities; but, although they generally extend, they rarely occupy the muscles of the back, loins, and face. The abdominal muscles are affected near their point of contact with the extremities, then those of the thorax, and the diaphragm. These spasms are rather convulsive than tetanic; but they vary in their character in the same patient, at different periods of the disease; in some cases, at the commencement, the muscles contract convulsively, but rigidly, and gradually assume a clonic state, which seems generally to predominate.

"The spasms and evacuations are accompanied by deafness, vertigo, ringing in the ears, coldness of the extremities and surface of the body. The patient ordinarily experiences great oppression and anxiety in the cardiac and epigastric regions; the respiration is difficult, interrupted, laborious, frequent, and irregular. Pains, often violent, analogous to colic, are sometimes felt in the abdomen; and, like those which accompany the spasm of the abdominal muscles and extremities, they are relieved by pressure and frictions. In some cases the abdominal pains are aggravated by the return of the spasms and evacuations. In proportion as the disease advances, the skin becomes more and more cold; it is covered with an abundant and cold perspiration, wrinkled, soft, and livid, principally on the extremities. The features are contracted, express anxiety, and the countenance assumes a cadaverous aspect. The eyes sink into the orbits, and are surrounded by a blue circle. The pulse is at first small, frequent, and concentrated, then scarcely sensible at the wrist. The blood, drawn at this period, is quite black, thick and oily, and frequently it will not flow from the vein. The arterial presents the peculiar characters of venous blood. During all this time, the patient complains of a sensation of heat towards the epigastrium and umbilicus, and of unquenchable thirst; the tongue and mouth, however, are moist, cold, and white; the lips are cold and blue. The vomiting and alvine evacuations are then frequent, and composed entirely of a liquid similar to rice water, in which portions of mucus and albuminous matter are observed to float. This matter is sometimes turbid, thick, and of various colors, but it is always* free from any mixture of bile. The matter evacuated per anum is expelled with force, as if through a syringe, but usually without any pain.

" At a more advanced period of the disease, the evacuations become less and less frequent, and sometimes they are suspended altogether, a long time before death. The same thing is observed as regards the spasms. The urine and saliva do not appear to be secreted, and all the glandular secretions seem to be completely arrested during the remainder of the disease. However towards the end, when the violence of the vomiting and dejections has ceased, an aqueous and limpid liquid, sometimes ichorous, continues to flow from the mouth and anus, until the death of the patient.

" As the disorder increases, the eyes sink, the features become altered, and the corneæ are turbid; the extremities are icy, covered with a cold and viscid perspiration, and the whole skin is soft and wrinkled; the hands and fingers look as if they had been plunged for some time into warm water; the nails are blue, and sometimes bluish rays are observed on the skin; the voice is enfeebled, and becomes sepulchral and unnatural; the respiration, more and more oppressed, is generally frequent, sometimes slow, and the air expired by the patient is cold. During this state, there is usually agitation—the patient throws himself about continually, and appears to experience great suffering. He bears any disturbance very impatiently, and does not talk but with repugnance; his physical powers being thus under the influence of disease, he nevertheless retains his intellectual faculties until the last hour of his existence.

" At the approach of the fatal termination of the disease, the sensation of anxiety and oppression, towards the cardiac and epigastric regions, increases, so likewise does the agitation; the vital forces are gradually worn out, and the patient dies generally, twelve, fifteen, twenty, or thirty-six hours after the invasion."

" Mr. Annesley has not limited himself to the enumeration of the symptoms of the disease, which he has observed in India, according to the order in which they appear. Convinced of the necessity of anticipating a malady, which calls for the most prompt treatment, he has mentioned in detail the phenomena of the first period.

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* In the part of the work of Dr. Annesley, from which we extract this paragraph, the affirmation is absolute; but farther on, it is confined to the second period of the disease, and instead of *always*, the author remarks *almost in no case*.

"Under ordinary circumstances, the features have already undergone a slight alteration, approaching to a state of anxiety, which the patient seems yet to bear well; but the attentive observer recognizes in him a certain prostration, sometimes a viscid perspiration on the skin, and the pulse, although at times full and strong, is evidently embarrassed. This is the proper moment for the abstraction of blood.

"At the commencement of the invasion, the patient experiences nausea, he goes more frequently than usual to the *garde-robe;* the matter discharged by stool is nothing more than that contained in the large intestines, and its aspect depends upon the state of the digestive organs. The patient often complains of a sensation of compression in the abdomen; he feels exhausted, and appears to be incapable of the slightest action; pains are frequently felt in the abdomen, but they commonly cease, or are alleviated by pressure or by easy evacuations; and the urine is generally voided in small quantities and at long intervals. In certain cases, the abdomen is larger than usual, when even the patient feels a sensation of vacuity in this cavity after repeated evacuations."

"M. Lamare-Picquot describes very briefly the cholera of the Isle of France—violent colic; evacuations upwards and downwards, repeated at short intervals; disappearance of the pulse; total annihilation of the physical forces; sometimes a species of viscid transpiration, not very abundant, is remarked; most generally the skin is cold and dry; excessive thirst; the eye soon becomes dull and sinks into the orbit; the cheeks and rest of the face become griped; convulsive movements and numbness manifest themselves; in this state the patient sees but little, sometimes not at all; and notwithstanding this sort of physical death, he is enabled to appreciate fully his condition, even when he is unable to express himself.*

"M. Keraudren has collected, in a table remarkable for its conciseness, the symptoms of cholera observed by the surgeons of the French marine in India, the Isle of Bourbon, and aboard the government vessels.

"Invasion sudden, often after a repast and during the night; cephalalgia and gastralgia; vomiting at first, of alimentary matter, then bilious, and finally, serous and mucous; evacuations repeated and involuntary, of a greyish white color, rarely yellow or black; tension of the epigastric region, depression of the abdomen; thirst ardent; perspiration viscid; pulse small, corded, concentrated; anxiety, cramps, supination, convulsions, trismus; tetanic rigidity, alteration of the countenance; coldness of the extremities; hiccough, syncopy, insensibility of the pulse and movement of the heart; voice feeble and hoarse; respiration slow, and finally death." *

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* *Observations sur le Choléra Morbus.* Paris, 1831, *p.* 10.

"In 1829-30, M. Rang observed the cholera at Orenburg. It announced itself several days in advance by vertigo, dizziness, anxiety, wakefulness, pale visage, a sensation of cold in the chest, palpitations, acceleration of the pulse, pains in the abdomen, nausea, loss of appetite, and constipation; then it commenced suddenly by an aqueous, white diarrhœa, followed by successive vomiting of liquids differently colored, accompanied with tension and excruciating pains. The countenance of the young soon assumed the aspect of decrepitude; and the lips and extremities were covered with blue spots, which afterwards extended over the whole body.

"Sir William Crichton describes, in the following terms, the symptoms of cholera observed at Moscow:—General agitation, violent pain of the head, vertigo, profound languor, oppressed respiration, suffocation, pain in the epigastrium and sides; pulse lively and frequent; vomiting at first of undigested food, then of an aqueous liquid mixed with mucosities of a peculiar odor; frequent dejections; acute pains; scarcity or suppression of urine; excessive thirst; cramps in the legs, *commencing at the* toes and extending gradually over the whole body; voice feeble and hoarse; eyes dull and hollow; features altered and cadaverous; coldness, contractions, and lividity of the extremities; general chilling; lips and tongue blue; perspiration cold and viscid. The vomiting and dejections soon exhaust the patient, the spasms increase, the pulse becomes insensible; the pulsations of the heart are slow; and the patient, after terrible sufferings, dies immediately after a short moment of calm. The duration of the disease is from twenty-four to twenty-eight hours, and sometimes shorter."†

Our author has classed the symptoms of cholera in the following manner.

"*Digestive Organs.*—Sentiment of distress, weight, tension, pulling, anxiety, burning heat in the epigastrium and umbilicus, extending, in fine, to the whole abdomen.

"Pain in this cavity, sometimes increasing, sometimes diminishing by pressure and frictions.

"Abundant and repeated vomiting and dejections, at first of alimentary, bilious, fecal and mucous matter; afterwards of an aqueous, serous, limpid, whitish substance, often flocculent, sometimes thick, green, brown, fetid in certain cases, inodorous in others, and acrid in some instances.

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* *Mémoire sur le Cholera Morbus de l'Inde, dans le Journal Universel et hebdomadaire:* Janvier, 1831. t. 2. p. 18.

† Bisset Hawkins, *History of the Cholera*, page 100.

" Distressing thirst;

" Tongue and mouth, moist, cold, and white.

" *Respiratory Organs.*—Difficult, irregular, oppressed respiration, generally prompt, sometimes slow;

" Spasms in the muscles of the thorax and in the diaphragm;

" Hiccough;

" Voice feeble, hoarse, sepulchral.

" The air expired is cold.

" *Circulatory Organs.*—Pulse quick, concentrated, then small, rare, thready, insensible;

" Blood black, thick, glutinous, flowing with difficulty from the vein and artery, when these vessels are opened;

" Urine small in quantity, and voided with difficulty.

" *Organs of Sense.*—Humming in the ears, difficulty of hearing; vertigo, dimness of vision; eyes dull, surrounded by a livid circle, and sunk into the orbits.

" Alteration of the features, cadaverous aspect of the countenance; skin cold, covered with a cold and viscid sweat, then of clay color, and wrinkled, particularly at the extremities.

" *Organs of Locomotion.*—Agitations, contractions, convulsions, tetanic rigidity, and pains in the limbs; profound prostration.

" The *Intellect* ordinarily continues unimpaired in the midst of these disorders, until even it becomes destroyed with sensation, respiration, circulation, and motion."

CHAPTER II.—*Autopsical Examination.*

The result of these examinations has been given by our author in the following order:—

"*Digestive Organs.*—On opening the body, a disagreeable and peculiar odor is sometimes exhaled. This cavity preserves its heat for some time; ordinarily, it is not contracted, as it was during life;

" The œsophagus is sometimes red on its internal surface;

" The stomach is generally flacid, and sometimes constricted; its parietes, sometimes thickened, generally friable, rarely perforated; its external surface, covered with a vascular net-work filled with blood, the black color of which imparts to it a brown shade; its vessels, injected, and considerably dilated by black blood; its orifices, sometimes constricted; its mucous membrane, at times, of a remarkable whiteness, at other times, of a spotted red, seldom general, and most usually it presents numerous vascular ramifications, very evident and black, and sometimes crimson spots, or red points bordering on brown, especially towards the pylorus; ordinarily wrinkled, soft, pulpy, friable, easily lacerated, and detached from the sub-adjacent membrane, rarely ulcerated, and still more rarely gangrenous; its cavity, seldom empty, containing usually a whitish, gray, viscid, opaque matter, adhering to the mucous membrane, or floating in its cavity, and sometimes *filling it up*; frequently, a transparent serosity, or which has been rendered turbid by the presence of viscid matter, is dissolved in it, or disseminated in flocculi:

"The intestines are contracted or dilated, or contracted at certain points and dilated at others;

"The small intestines are red exteriorly, offering all the varieties, from the rose to a bluish, black purple, from the duodenum to the cœcum; their parietes are thickened, flaccid, and friable; their internal surface is pale at the superior part of the canal, red and brown at the inferior, covered with a thick, viscid, gray, yellowish, cream-like matter, sometimes detached, floating in an abundant serosity, which is rendered turbid and grumous by the presence of this matter; the numerous follicles are very much developed;

"The large intestines, thick in their parietes, are *injected*, brown on their external surface, covered by vascular *ramifications*, and sometimes of a brownish red color on their internal surface; their mucous membrane is soft, friable, very rarely ulcerated, containing but a small quantity, if any, of fecal matter, and offering the viscid matter and serosity contained in the small intestines and stomach; the arch of the colon is sometimes *considerably* contracted, so as scarcely to admit the end of the finger.

"The mesentery is red and injected; the mesenteric ganglions are sometimes very much developed.

"The epiploon is injected, red, adhering or curled up, and thrown to one side of the abdomen.

"The liver is ordinarily gorged with black and thick blood, so as to have its volume increased by it; it is flaccid, soft, purple, blue, and brown;

"The vesicle is almost always filled with an abundance of green, brown, blackish, thick, and viscid bile.

"The biliary canals, especially the choledochus, are constricted, at least in appearance; the orifice of this canal, it is said, is closed rather frequently.

"The spleen, gorged with blood, is enlarged, soft, and friable.

"*Respiratory Organs.*—The pleura is pale, sometimes offering ancient adhesions;

"The lungs withered, of a dark color, gorged with black and viscid blood, heavier than usual, and still containing air;

"The bronchial mucous membrane is sometimes softened, pulpy, and covered with a viscid matter similar to that in the digestive organs.

"*Circulatory Organs.*—But little serosity in the pericardium; sometimes it is red;

"The heart at times is soft and friable, occasionally enlarged by the blood it contains; the right cavities of the heart are usually dilated by black, thick, liquid, or coagulated blood under the form of black jelly; the left cavities either contain no blood, or a very trifling quantity; the coronary vessels are filled with black and coagulated blood.

"The venous system is generally gorged with black, liquid, thick, or unctuous blood, particularly in the splanchnic cavities; empty in the extremities.

"The arterial system is deprived of blood; the small quantity, which sometimes exists in the aorta is similar to that in the right cavities of the heart.

"The kidneys, sound in the great majority of cases, contain a remarkable quantity of blood.

"The bladder contracted, reduced to the size of a hen's egg, or even to that of the uterus in a state of vacuity, deeply concealed behind the pubis, is injected on its internal surface, and covered with a white, opaque, viscid matter, without the least vestige of urine, and containing but a small quantity of glairy liquid.

"*Organs of Sense.*—The features are terribly convulsed;

"The face gray, blue, and black;

"The lips purple, and livid;

"The skin soft and wrinkled, of a dark livid blue on the extremities.

"*Organs of Locomotion.*—The cadavera, under ordinary circumstances, preserve flexibility in the limbs for a considerable time; however, the muscles are sometimes contracted, and the body is bent forwards as it was during life.

"The intermuscular cellular tissue, as also that of the whole body, is sunk down.

"*Nervous System.*—The spinal marrow is gorged with blood, and its membranes are red and injected;

"The trisplanchnic, dissected with care, does not offer any appreciable alteration;

"The sinuses and vessels of the encephalic meninges are ordinarily distended with viscid and black blood.

"Blood is sometimes effused on the surface of the brain;

"Sometimes, a serous or gelatinous effusion, generally not very abundant, exists in the ventricles and between the meninges;

"The arachnoid is often opaque, thick, and adhering;
"The cerebral substance is occasionally softened and pulpy.

CHAPTER III.—*The Nature and Seat of Cholera Morbus.*

In this chapter our author has briefly noticed the various opinions which have been promulgated as to the proper seat of the disease. With respect to the humoral pathology, he says, "At the present day, as the humors are no longer considered as any thing but the product and aliment of the organs, we have ceased to imagine spontaneous alterations in them, and physicians have agreed upon this fact—that the altered humors cannot precipitate, moderate, or trouble the organic movements without affecting the organs themselves." As to the bile, he says, "it is an effect and not a cause of the disease, and that although there are cases of Cholera where bile is evacuated, yet there are others in which it is rarely observed in the excretions:—the proximate cause of Cholera therefore, does not reside in the bile."

He further says, "In vain have certain individuals imagined that Cholera Morbus was due to an alteration in the blood. What motive is there for advancing this proposition? During life, this fluid scarcely flows from the vein, and whether we abstract it from a vessel of this kind, or an artery, it is black and viscid, and is said to be cold. After death, it is found accumulated in the venous system, black, viscid, coagulated, or liquid, according to the cases. These phenomena are to be noted and referred to the previous state of the individual. In a word, during the disease, when it is intense, and it has always been so when death has followed, the circulation is singularly changed; the pulse is small, thready, and insensible; there is, therefore, a coincidence between the cadaveric phenomena and the symptoms; but where is there sufficient reason for ascribing all the other symptoms to this condition of the blood? Does this condition exist from the commencement? Does it even precede the invasion? Shall we attribute to it, the vertigo, nausea, and diarrhea, which sometimes precede the attack? Nothing authorizes such a supposition; it is not even probable. Neither will we be authorized in attributing these symptoms to the thickening, viscidity, or if preferred, to the excessive liquidity of the blood, at a time when the circulation is not yet injured, and when the digestive organs and functions already announce an evident lesion. Let us, therefore, remember that the modifications of the blood in Cholera are secondary, and that we must examine farther, in order to find the source of the disease."

"He now asks:—Is Cholera a disease of the vessels, respiratory system, digestive organs, heart, lungs, or nervous system?

"The lungs, vessels, or the heart itself, are not primitively affected in Cholera. In truth, in some cases, the smallness of the pulse, the difficulty in respiration, the coldness and bluish color of the skin, appear from the commencement of the disease, and even before the symptoms of the digestive organs; but these cases are not very common. In fine, it is in cases such as these that the symptoms, which ordinarily characterize the passage of the disease to death, show themselves simultaneously with the phenomena of the latter; these may be viewed as mere exceptions. In order to appreciate them properly, it is necessary to compare them with those cases in which the truly characteristic signs, that is to say, the most constant, those which are usually primitive, and without which the disease cannot receive the name of Cholera, have time to manifest themselves. These cases are the most numerous, even in the general epidemics, which prove so destructive.

"It is, moreover, proper to remark that the signs of profound lesion in the circulatory and respiratory systems observed in all acute diseases, when death is at hand, in dangerous fevers, such as typhus, plague, and yellow fever, are sometimes the phenomena of fatality at the commencement of these affections, when they destroy a large number of inhabitants. So far, the idea has not suggested itself to practitioners, of attributing these diseases to a sort of asphyxia, or syncopy, sustaining themselves on facts purely exceptional. In order to commit this error in relation to Cholera, it would have been necessary for the predilection of chimerical theories, and the prejudice which results from superficial observation, to have assumed the place of truth and sound sense.

"The Cholera, therefore, is not an asphyxia, nor a syncopy, whatever resemblance it may offer to these two affections before and after death, as regards the state of the respiration, lungs, and right cavities of the heart, as likewise the venous system. The Cholera is not, at least primitively, a disease of the heart or lungs."

Our author inclines to the opinion that Cholera is a disease of the nervous system and gives for his reasons, "the suddenness of its attack, the rapid progress of the disease, the numerous nervous symptoms characterizing it in the majority of cases; the nervous character of the symptoms appertaining so frequently to other organs, or at least manifesting themselves in other parts than the nervous system itself; the appearance of symptoms really nervous at the commencement of the disease, and even before any others in certain instances; the absence of pain in some subjects, its diminution on pressure in others; the absence of any evidences of inflammation, when the disease had continued but a short time; a still more manifest absence of inflammatory phenomena in those cases in which it terminated by a speedy return to health; a few morbid traces of little value in different parts of the nervous system; and some others announcing a diseased state of this system, all tended to the belief that the nervous system was the seat of Cholera Morbus."

He then goes on to state that the digestive system is deeply involved in this disease, he says, "During life, there is a sensation of weight, embarrassment, heat and pain in the epigastrium, and soon afterwards around the umbilicus; loathing of food, diarrhea, nausea, excessive thirst, dejections, repeated and violent *vomiting*, which soon ceases and is accompanied by feeble nervous symptoms, or increases so that the digestive tube is, as it were, twisted, and depressed in all directions; very abundant *evacuations at the* same time, and afterwards debility or convulsive action of the muscles; sometimes developement of pain, increased by pressure on the abdomen; appearance of symptoms of gastritis, enteritis, gastro-enteritis, with or without prostration. After death, there are most frequently, if not evident redness, at least injections, not in the whole extent of the digestive tube, but on different points of this canal, and always more apparent than the lesions of other organs; and when the disease has attained its greatest degree of intensity, when it proves fatal to the greatest number of those it has attacked, a viscid and serous matter is observed *in the* stomach and intestines, sufficient not to confound this disease with any other.

"Such are the phenomena, which clearly *indicate the important* influence exerted by this malady over *the digestive organs.*"

CHAPTER IV.—*Causes of Cholera Morbus.*

In this chapter our author has given us the various theories upon the causes of Cholera, and has concluded by saying, "We may therefore suppose all that we wish in reference to the unknown causes of Cholera, and we shall gain nothing in regard to the origin, cause, prevention, or limitation of this disease."

CHAPTER V.—*Is Cholera Morbus Contagious?*

Upon this subject our author thinks that the question is reduced to the following propositions, "It may be that Cholera is contagious, that it may become so under certain circumstances; for there is, perhaps, no disease, particularly of the mucous membranes, which is not susceptible of being transmitted in peculiar situations,* but facts seem to establish that it is not so, and because we are unable to explain the extension of Cholera, *it does* not follow, as a necessary consequence, that this disease is communicable, or that it is importable.

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* Dict. Abr. des Sc. Méd.

"If no fact exists, worthy of this name, (for simple assertions are not facts,) if there exists no fact to attest the transmission of this disease from one individual to another, there is still less proof of its propagation by means of wearing apparel, body, and bed linen; *à fortiori*, we possess no evidence of its importation by merchandize.

"The contagion of Cholera, therefore, reduces itself to a mere possibility, against which we have to oppose observation. Let us add that analogy does not even bear it out. The Cholera is unattended by inflammation of the skin, or by any warm exhalation from this tissue, which is covered merely by a cold perspiration; the evacuations have no remarkable odor, after the discharge of the first gastro-intestinal matter; often, the serous matter alone is evacuated; the disease is of a very short duration; the emanations are neither abundant nor repeated; the matter and blood of individuals affected with Cholera have been inoculated. Nothing has denoted the contagion.

"However, in admitting that the Cholera may become contagious, science undoubtedly goes beyond observation, but it does not exceed the limits of sound logic, for it is not conformable to reason to deny or admit absolutely a problem, when all its terms are not known. Now, if this argument hold good in Medicine, it assuredly is applicable to epidemics, a part of whose history is concealed from us.

"In fine, the Cholera may be contageous; but, if it be transmissible, it must be so in a very small number of cases, for as yet we have been unable to assure ourselves of the fact. Every thing, therefore, tends to the opinion that the Cholera is an epidemic and not a contagious disease."

CHAPTER VI.—*Mortality of Cholera Morbus.*

"Sporadic Cholera Morbus is rarely mortal, when even it is accompanied by very violent symptoms. However, we should be guarded, and act as if the danger were in proportion to the intensity of the phenomena. Success frequently crowns the efforts of the physician, and often too, the patient recovers without the resources of our art, where the disease is very intense.

"Such is not the case with epidemic Cholera, particularly at the commencement of its irruption; its victims are numerous, and the medical art is frequently unavailing.

"At Bengal the mortality has been one in fifteen, eight, seven, six, five, three patients, a fourth, often a half, and sometimes more: for example, at Dangulpore, scarcely one patient in two escaped death; at Bombay, one in six died; at Madras, one in five among the troops, one in sixteen among the citizens. Saim, Java, Pekin, the Isle of France, Lahore, Mascate, Bassorah, Bagdad, Bender-Abouschir, Schirez, and Yerd, were subjected to immense losses. In Russia, three in five died. Among the Cossacks of Oural six in seven fell victims. M. Moreau of Ionnès, after innumerable calculations, states that in Hindostan, one person in ten was attacked with Cholera, and that one in sixteen perished; whence he concludes that India has lost, by this scourge, eighteen millions of inhabitants in fourteen years. He has remarked that a sixth of the population of Persia perished, under the influence of a dry and very elevated temperature. In fine, from one-sixth to two-thirds of the sick perished, which gives a medium term of three-eighths. The number of women who have died scarcely equals one-fourth of that of the other sex, which we may attribute to their constitution, habits, and regimen. It is evident that these three circumstances are not without action in the production of Cholera Morbus, since they exert such an influence over its mortality. In Persia, the longest irruption continued one hundred and fourteen days, and the shortest, about twenty. Its duration is greatest in the summer season. In Russia, the Cholera attacked one man in two hundred and ten, and proved fatal to one in three hundred and fifty.*"

Our author is of opinion that the Cholera will be less fatal in the west than it has been in the east of Europe and in Asia, and the progress which this disease has made in England seems to justify his deductions.

CHAPTER VII.—*Treatment of Cholera Morbus.*

It will be impossible for us here to give even the names of the various medicinal agents which have been employed in the treatment of this disease. We shall only be able to give a brief outline of that mode of treatment which our author recommends. He says, the cholera *gravis* requires the most active treatment. If there be no manifest symptom of gastro-intestinal irritation; if the tongue be neither red on its borders, nor dry, if the epigastric region be not painful on pressure, we should apply cataplasms of flaxseed sprinkled with a solution of the gummy extract of opium; to the abdomen, mucilagenous lavements should be administered, and the vomiting of alimentary matter be encouraged by warm water. We should not endeavor to check the dejections, and the lavements should be continued as long as the intestines demand them. Blood letting is indicated when the patient is vigorous, and the skin natural—if nervous symptoms should ensue or continue after the vomitings and dejections have ceased, we should prescribe rubefacient pediluvia and sinapisms to the legs. If an amelioration of the symptoms should have succeeded the above treatment, we should abstain from opium. "The hands are to be enveloped in warm cloths, if they should become cold, and the feet plunged into warm water rendered styptic, if all the alimentary matter has been evacuated; if the surface of the skin is chilled, it will be proper to wash it with warm water in conjunction with vinegar or alcohol, or even the patient may be put into a bath. If, notwithstanding these remedies, the evacuations persist without the patient feeling any pain in the abdomen on pressure, and if they are composed merely of mucosity or serum; if the convulsive or tetanic symptoms prevail, it will be necessary to give a grain of opium in a spoonful of a warm and sweetened infusion of orange leaves, every hour. Opiate lavements must never be administered.

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* *Op. cit.* Chap. iii.

"In the varieties of Cholera just mentioned, if the thirst be very acute and the skin heated, we may prescribe cold drinks; they must be given warm if the skin have a tendency to chill; hot, if the surface of the body have lost its warmth; but always in small quantities, no matter what their temperature may be.

"I am of opinion that we should never employ narcotics in lavement, because there necessarily will be an inconvenience in suppressing the stools, whilst the vomiting continues—it is this latter that we should more especially endeavor to arrest, for it is entirely opposed to the normal state."

In the variety of Cholera above mentioned our author disapproves of the administration of calomel, ether, and ammonia—when there is prostration and stupor, he recommends sinapisms to the feet. If these symptoms arise from congestion of the brain, open the veins of the foot or arm, or the vessels of the anus by leeches. If there be inflammation of the digestive passages, the leeches should be applied to the epigastrium.

Under the name of mortal Cholera, our author has given us the symptoms and treatment of that form; in which from the commencement, death is expected. "It manifests itself in two ways. It sometimes declares itself by all the phenomena characterising this malady; the symptoms increase rapidly, and the most alarming, acquire an extreme intensity; the extremities become cold, painful cramps are experienced, the limbs are almost in a passive condition, the pulse is extremely small and feeble; the countenance is altered, sharpened, and depicts decrepitude. Sometimes, these same symptoms, if they do not appear precisely the first, manifest themselves at the same time with the evacuations, so that death, as it were, occurs simultaneously with the disease. Sometimes even, it is said, the phenomena of approaching death are declared, when the local symptoms have scarcely had time to develope themselves.

"In this latter case what is to be done, and what are we to hope from any remedy we may employ? Plunge the patient into a warm bath, rendered stypic; when taken from the bath, dry the skin with warm cloths, then rub it with coarse flannel, and afterwards with a soft brush; put sinapisms to the feet; rub the calves of the legs with ammoniacal liniment; cover the abdomen with a plaster or cataplasm, sprinkled with several grains of tartar emetic. This is all that can be done. We must, before every thing else, excite the organic action either by stimulating the skin, or by drawing the internal irritation towards it. If these means succeed in exciting the patient, and determine re-action, it may then be useful to practice blood-letting; it will be unnecessary to make it very copious, if the other means have already affected an amelioration. If, however, considerable re-action declares itself, it will then be proper to abstract a large quantity of blood. Certainly, this is not a proper case for the employment of opium. Calomel, whose action is generally so slow, cannot exert any influence over a disease so rapidly fatal. The drinks should be warm and slightly aromatic, until the patient desires them to be changed.

"When the symptoms, announcing the evacuations and spasms, appear simultaneously with the phenomena of death, we must necessarily attend to the latter as well as the former; and we should proceed with attention, judgment, and devotion. As soon as re-action begins to appear, it should be fortified by warm aromatic drinks, and by rubefacients or blisters.

"In fine, in those cases in which hurried, repeated, and copious evacuations are immediately accompanied by violent convulsions in an individual threatened with death, it will be necessary, almost at the same time that we heat, and stimulate, the skin by the most powerful and efficacious remedies, to abstract blood from a vein, and also administer opium in warm or cold gum water, in proportion as the skin is cold or already heated.

"Boiling water may be advantageously employed in those cases in which life is suddenly threatened. It would likewise be proper to have recourse to moxas of cotton or blotting paper dipped in alcohol. Perhaps, it has been wrong, in a similar case, not to use the actual cautery, at least when every thing seems to fail in producing the slightest re-action."

CHAPTER VIII.—*Means to be adopted by individuals, in order to avoid Cholera.*

The rules given by the author, for the above purpose, are few and simple. Humidity should be guarded against; the body clothed in woollen; the feet kept perfectly dry; vicissitudes in temperature avoided, and wholesome, light, and nutricious food used; all excesses either in eating or drinking must be abstained from, and none but the very best liquors taken; coffee should be discontinued, or used very weak; the skin should be kept clean and fresh, by means of warm baths; all fatigue should be avoided; in short, sobriety, cleanliness, and firmness, are the only preventive measures to be adopted, against the Cholera.

In the last chapter, the author has given us the measures to be taken by the civil authority, for the purpose of preventing Cholera, and limiting its ravages. As these consist but in the enforcement by law, of the precepts laid down in Chapter 8, we have not deemed it necessary to notice them here.

The translator of this work has, in his preface, completely disarmed criticism, by the avowal he has made of the very short period it was in going through the press. The errors in it are very few, and do not at all affect the sense of the author; and we are very happy in being enabled to record our testimony, as to the masterly manner in which the translation has been completed. In an original work, want of time can never be accepted as an excuse for error, but in a mere translation, a single day is of the greatest importance, as by its delay, the translator may have the mortification of seeing the announcement of the same work from the pen of another, and thus lose the entire fruit of his labors.

Memoir of a case of Hydrocele in a woman. By DR. CHARLES SACCHI. [*Annali Universali di Medicina, Mars,* 1831.]

Hydrocele is an affection which is very rarely met with in women, nevertheless it has been mentioned in the works of the oldest surgical writers. Thus, according to Aetius, Aspasie had observed this aqueous tumor in several women. Ambrose Paré, Felix Plater, Bertrandi, Desault, and in our day, Monteggia, Scarpa, and Paletta, have all spoken of it, but they do not agree as to the precise seat of the malady, or as to the parts which are primarily developed. According to Plater, the hydrocele is formed in the cellular sheath which surrounds the round ligament of the uterus. Bertrandi is of the same opinion, but he thinks that the tumor always is found in the side opposite to that towards which the uterus is carried when it is moved from its normal situation. Scarpa, on the contrary, asserts that hydrocele may be indifferently developed upon either side, both in the cellular sheath of the round ligament and in the sub-cutaneous cellular tissue of the pubis. Monteggia affirms that he has several times met with it in very young female infants, and that it was seated in the canal which bears the name of its discoverer, Nuck. Paletta has seen hydroceles in two women which occupied that part of the inguinal region into which the round ligament was prolonged. I have seen but one single case of hydrocele in women, and from this, as well as from the two cases reported by Paletta, I am convinced there is no foundation for the various opinions which have been put forth as to its proper seat. Observation has shewn that it is not unusual to find in women an appendix of the peritoneum analogous to that which accompanies the testicle in men, and it is in this that the serosity is contained which constitutes the hydrocele. Before relating the facts which have led me to this opinion, it may be as well to recall some anatomical peculiarities which throw light upon the subject, and concur in proving that which I have pointed out, as being the primary seat of hydrocele.

Upon consulting the writings of anatomists upon this point, we see that Warthon has several times found in female children a small canal about the size of a goose quill, and an inch and a half in length, situated in that part of the inguinal fossa where the round ligament of the uterus is expanded in the cellular tissue of the pubis. According to Lawrence, Camper has made the same observation. He found this canal in three out of fourteen still-born children. I have found it once in the only three cases which I have had the opportunity of examining. Paletta, who is according to my opinion the author who has given the best description of this arrangement of the peritoneum, says—"At whatever period a female fetus is examined there will constantly be found an appendix of the peritoneum which is prolonged from the inguinal ring, which is different from the arrangement which exists in male children. The round ligament of the uterus is situated behind this appendix. This peritoneal prolongation is hollow, and is open upon the side of the abdominal cavity. The orifice of this cul-de-sac is ordinarily closed about the time of birth; but in the mean time the cavity is effaced by degrees, so that finally there is to be found but a kind of ligament remaining."

I must here observe, that this obliteration of the canal does not uniformly take place either before or after birth, as Paletta has asserted, for although the examples are rare, yet it is certain that it has been observed in women of advanced age. Lecat has seen it in a woman of sixty-six years of age. Wrisberg, who is cited by the same author, says that, in 200 bodies which he examined, for the purpose of discovering this disposition of the peritoneum, he found nineteen presenting, either upon one or both sides, a canal, which was prolonged from the abdominal cavity into the inguinal region and the great lips of the vulva. This canal terminated in a cul-de-sac, lined by a prolongation of the peritoneum, and fixed to the round ligament of the uterus. I have not been equally fortunate in my researches with the different authors I have cited; but from them I am convinced that it is in the peritoneal prolongation that the first accumulation of serum takes place which afterwards constitutes the hydrocele.

Observation 1. A lunatic woman had in her left groin a smooth ovoid tumor, but little painful and feeling like a bladder filled with fluid. This tumor was situated obliquely above the left groin, and terminated below and within the superior part of the great lip of the vulva, on the same side. Although there were none of the diagnostic marks of hernia present, yet several physicians pronounced it to be of that nature. In fact, several months before there had been a tumor in the same place, which had disappeared on pressure, and which gave rise to the opinion that it was a hernia. In consequence of this diagnosis, the operation was performed and gave rise to the discovery of a sac distended by an enormous quantity of yellow serum. Its internal surface was quite rough. Upon carrying the finger up to the superior part of this sac its orifice, or the inguinal ring was sensibly dilated, and upon a slight pressure the finger penetrated into the cavity of the belly. After opening the sac longitudinally it was filled with charpie, retained by a bandage. Suppuration was soon established, and was followed by a rapid cicatrisation and obliteration of the tumor.

Observation 2. In the second case which Paletta relates, the tumor was the size of the fist, and was situated on the left side upon the superior part of the great lip of the vulva. The great thickness of its parietes prevented us from ascertaining by the sense of touch whether it contained a liquid or an etheromatous deposit. Percussion, however, indicated a contained fluid. The tumor was opened in its whole length, and was found to contain a large quantity of serous fluid. Its internal face was covered with a thick membrane which was easily detached and which was cut away from the neighborhood of the inguinal ring. The instrument here met with a small hard body, the section of which caused the patient a great deal of pain. The partial excision of this ligamentous swelling exposed to view one side of the inguinal ring into which the extremity of the finger could be introduced, when the discovery was made that this hard body was only the remaining portion of the round ligament. No important hemorrhage succeeded the operation, but in a few days the patient was attacked with repeated vomitings. There was a painful engorgement developed in the inguinal region and a hard round tumor formed itself at the cut extremity of the round ligament. All these local affections disappeared upon the establishment of the suppuration, which continued a long time and finally resulted in a complete cure.

The following case was observed by me in the Grand Hospital of Venice, during the time I was surgeon to it:—

Observation 3. Maria Franceschi, æt. 60, of a debilitated constitution, entered the hospital 31st October, 1827, with an immense tumor in the right inguinal region. Her account of its origin and progress was the following. At the age of 31 years she became for the first time encient, and during the labor-pains a tumor appeared in the right groin which became very painful and very much impeded parturition. After the birth of the child the attendant dissipated the tumor by pressure, and recommended a bandage to be worn, because, as he said, she had a hernia. This was strictly attended to. Since that period she has had two other accouchements, without the re-appearance of the hernia. Maria Franceschi had arrived at the age of 58, when she discovered that the tumor would not disappear upon pressure, as it formerly did, and that it always remained saillant, notwithstanding the application of the bandage. For two years she had been conscious of an increase in the tumor, when one day as she was ascending the staircase, with a load of wood, she suddenly felt a protrusion of the hernia. She made an ineffectual attempt to reduce it herself. She was carried to the hospital in the middle of the night, when she was bled, and had emolient applications to the tumor. The trunk was bent upon the pelvis, and the thighs brought together and flexed upon the belly. On the following morning (1st November) I for the first time saw the patient. She had an immense tumor, situated in the superior part of the right inguinal region, of an irregular cylindric form. It was directed obliquely downwards, in the direction of the inguinal canal, and occupied the superior third of the large lip of the vulva. The blood drawn presented no traces of inflammation. The patient was much dejected, her face pale, tongue white, with continual nausea and occasional vomitting of fetid matter; no stool since the evening before, belly soft and without pain on pressure; the pulse was small and frequent, the tumor slightly painful to the touch. She answered with difficulty the questions proposed to her, and when asked where was the exact spot at which the tumor had first appeared, she placed her finger upon the middle of it, and precisely at the point where the round ligament of the uterus comes out, consequently at the inguinal ring.

In this state of things it was useless to recur to the ordinary means of reduction, which had already been tried in vain, and it was deemed proper to resort to an operation, as we all supposed it to be a strangulated inguinal hernia. It was immediately performed by Doctor Berlam, in presence of my colleagues, Doctor

Fanciani and Surgeon André Fabris and myself. The integuments were first cut in the whole length of the longitudinal diameter of the tumor; the subjacent layers were dissected off and discovered a smooth membrane, thick and of a white color, the opening of which was succeeded by the escape of a great quantity of yellow serum. The cavity which contained it was perfectly close, and was lined with a smooth polished membrane. This membranous sack adhered to a ligamentous cord, which was prolonged in the direction of the long diameter of the tumor. Upon the evacuation of the liquid, the tumor disappeared, with the exception of a portion of it which was situated in the inferior part of the fold of the groin. The cavity was filled with soft charpie, which was kept in place by a compress and T bandage. Some purgative medicine and a lavement were ordered. In the evening, the patient had copious evacuations. The nausea and vomiting left her, but the depression and stupor remained.

The following morning (2d November) the symptoms were the same, and in the evening a violent fever set in. The pulse was hard and very frequent. Ten ounces of blood were taken. The following day, which was the third after the operation, the patient had but little fever and the wound began to suppurate. By the fourth day the suppuration was completely established and the fever had entirely disappeared. The cicatrization made a regular progress and was completed by the 30th of November.

I have stated above, that after the opening of the sac, there remained a small tumor situated at the lower part of the inguinal region. This continued during the whole treatment which followed the operation. As soon however as the patient got out of bed, it began to increase in size and was evidently a femoral hernia, which the slightest pressure served to return. We could not determine if this was an enterocele or an epiplocelé. A truss was immediately applied and the patient left the hospital perfectly cured on the 10th December, forty days after her entrance.

When the details of these three cases are examined, it will be evident that, in all of them, the liquid was contained in a sack formed by the prolongation of the peritoneum, which enclosed the round ligament of the uterus and came with it out of the abdomen. This cavity had a free communication with that of the belly for a greater or less time after birth. In fact, in the three cases, the connexion of the sac with the round ligament, the nature of its parietes, so analogous to those of the serous membranes, together with the situation of the tumor, leave no doubt as to its nature and origin. Moreover, as it is certain that this peritoneal appendix is often found in women, is it not more natural to suppose it is in this cavity that the first accumulation of serum takes place, which at a later period forms the hydrocele, than to suppose it is secreted by degrees in a cyst of cellular membrane accidentally developed in that region? I do not mean to say that such is always the origin of these encysted tumors, which are found in women in this region and which have in their structure an analogy to hydrocele. Their mode of developement, the place where the cyst is first formed, the liquid they contain, offer such striking differences, that we cannot confound them with the tumors of which we have been speaking. It is not however my intention to state here the diagnostic marks which distinguish them.

I would here remark that one of the circumstances which would throw the most light upon this subject would be an exact history of the developement of the disease, and it is this absence of information which renders so difficult the diagnosis of hydrocele in women. In fact patients can very rarely give any useful information to the surgeon, and the only idea he can form of the nature of the tumor is from the sight and touch, together with a comparison of its particular characters with those of tumors the nature of which is well known. These indications are evidently insufficient to enable the surgeon to form a certain diagnosis, more especially when he wishes to determine the precise spot where the tumor first appeared. A hydrocele, when it first appears, is not likely to be confounded with tumified inguinal glands, whether indolent or sensible, or with varicose veins, but with herniæ. This cannot take place when there are symptoms of strangulation, for no such phenomena take place in hydrocele. But it is especially with epiploceles, free from adhesions, that hydrocele is liable to be confounded. Scarpa says, *on this* subject,

"There is so strong a resemblance between a small epiplocele and a hydrocele by infiltration, when this last is situated in the superior part of the spermatic cord and is accompanied by a *dilatation* of the inguinal ring, that the most experienced surgeon may find it difficult to distinguish between them. In both the tumor is cylindrical in form, there is the same dilatation of the inguinal ring, the same hardness and sensibility, and the same difficulty in its reduction. This coincidence of circumstances throws great difficulty upon the diagnosis. Pott believes he had found the true distinctive character of this kind of hydrocele. According to him, after its reduction, it returns at once, even although the patient remain upon his back, without coughing or making any exertion. The epiplocele, on the contrary, when reduced, will not re-appear under the same circumstances. This rule may hold good in some cases, but it certainly does not in all.

I have myself often seen the small cylindrical epiploceles, which at once came down after reduction, although the patient had remained perfectly quiet. On the other hand, I have seen hydroceles of the spermatic cord, which, after having their contents forced within the inguinal ring, would not return if the patient remained in a state of rest. From all which has been written upon the subject it appears to me that the least uncertain diagnostic mark is, that hernia has a more solid feel and a more irregular surface than hydrocele. The latter is generally larger at the bottom than at the inguinal ring, whilst the contrary rule obtains in hernia."—[*Scarpa*, *Traité des Hernies.*]

All which Scarpa has here said will apply with equal force to the kind of hydroceles now under consideration. In women, hydrocele and inguinal hernias resemble each other very much, in their mode of developement, their exterior characters, their situation and relation to the ring and inguinal canal, as well as in their tendency to extend themselves into the superior part of the great lip of the vulva. Hydrocele may be confounded with tumors issuing from the femoral as well as the inguinal ring. This assertion may at first sight appear very hazardous, and yet it is strictly correct. Anatomy furnishes us a full explanation of it, and the records of surgery offer us cases shewing where this error has taken place. Thus in women the Fallopian ligament is always very slender. It is longer, more bent and shrunk than in man. It is on this account that the ring and inguinal canal, in women, is so much inclined forwards and that the external pillar of the ring appears sometimes to be confounded with the Fallopian ligament. It will now be seen how the fluid which is accumulated in the cavity of the peritoneal appendix which surrounds the round ligament of the uterus, must by degrees enlarge the canal and ring, which last in women is very near the pubis, and finally occupy the same place as the bottom of a crural hernia.

It is well known that femoral hernia, as soon as it makes its exit from the crural ring, takes its station in the oval fossa, where the resistance of the parts affords but little obstacle to its developement. The tumor is insensibly prolonged to the base of the oval fossa, where its further progress is stopped by the intimate adhesion of the facia superficialis. By the frequent movements of the thigh, the sac is made to rise towards the inguinal region, where the hernia appears situated transversely, and parallel to the ligament of Fallopius which it covers, so that the base and the body of the hernia forms with its neck an angle more or less acute according to the height to which it has been forced. This explains the ease with which these two affections in women may be confounded. There is however one diagnostic mark, and it is that, in both hydrocele and inguinal hernia, when they have attained a great size, the tumor extends itself so as to occupy the superior part of the great lip of the vulva, whilst nothing of the kind ever takes place in femoral hernia.

Paletta has seen a hydrocele so intimately connected with an inguinal hernia, that to avoid accident he was obliged to perform the operation as in case of simple hernia. Richter asserts that he has often seen inguinal and crural hernias mistaken for each other by surgeons of the greatest experience. Astley Cooper bears witness to one such fact. In fact, Pelletan frankly acknowledges that he has several times operated upon crural herniæ, which he supposed to be inguinal, and did not discover his error until the opening of the hernial sac.

The only object I have had in view in thus calling the attention of the profession to hydrocele in women, has been to determine the precise point at which the aqueous tumor first is developed. The facts I have stated appear to me to leave but little doubt upon this head. I will conclude by remarking that, in the third case spoken of, the particular structure of the tumor fully justified the operation, and that the surgeon should not hesitate to operate, when he encounters inguinal tumors, the exact nature of which is a little obscure.

Essay upon the primitive form and development of the Venous System and the Lungs in Sheep. By H. Rathke, *of Dorpat.* (*Archiv für Anatomie und Physiologie,* 1830, *Cah. No.* 1. *p.* 63, *avec* 1 *pl.*)

Before commencing with a description of the venous system, the author has given us some account of the successive developement of the embryo in the sheep. In the youngest embryos which came under his observation, he discovered appearances of horns in the first stage of ossification, together with their arteries; the abdomen formed nearly the whole of the body; the thorax was scarcely visible, the neck nearly touched the abdomen, and the heart had but one auricle and one ventricle. Few traces of the lungs could be found, and the *corps d'oken* occupied the whole abdominal cavity.

Upon the external face of each lung was a vein going from behind forwards, increasing in size as it advanced, and receiving a great number of branches from the surrounding parts. The two veins had different origins; the one upon the right side originated from the small veins of the limbs and the tail, the one upon the left came entirely from the capsule of the organ. They both poured out their contents into the heart by one opening.

Two other veins came from the anterior part of the body, being manifestly formed by the small vessels of the head. Their volume was increased while under the second artery of the horns, from whence they went directly towards the heart.

These four trunks formed themselves into an arch, the convexity of which was turned towards the heart. From the extremities of this arch, two branches came off which again united in one trunk, and proceeded to the auricle by its superior surface. The branch which came off from the right of the arch received in its course the hepatic vein.

This disposition, however, which resembles so much that which is found in the viviparous animals, does not continue long. The common trunk of which we have spoken, diminishes in length in proportion as the auricle is developed, and finally disappears entirely. The blood is then poured into this cavity by two trunks, which at first are close together, but which separate themselves as the embryo approaches its term.

Upon the left side some important changes take place. Before this period an anastomosis is formed between the two anterior trunks at the posterior and inferior part of the neck, which in a little time is enlarged, so that the part of the left jugular vein which is behind it is decreased in size so that all its blood is carried by the anastomosis into the one of the right side. The posterior vena cava of the right side is also in a little time changed into a demi-azygos vein, whilst that of the right side is proportionately enlarged. The vena azygos is wanting both in the sheep and in the hog.

This same disposition is observed in the hog, with this difference, that all the changes are made with less rapidity.

The author is convinced that at one period the lungs consist but of two vessels, which at a certain time approach each other, and finally join so that they appear to form but one mass. He finishes by saying, that it may be supposed that the lungs and the bronchii are not formed as he has stated, but that these organs are the result of an unwinding of the alimentary canal in a way which Boer pretends he has observed in the embryos of birds.

Long Continuance of Copper in the Stomach without Poisoning.

A little girl aged seven years, was brought to me on the evening of the 27th July last, in consequence of having, about an hour previously, swallowed a halfpenny. The friends of the child were a good deal alarmed, but she did not appear to suffer much. On introducing my finger as far as it could reach, I felt the coin, which was lying edgeways, across the upper part of the œsophagus. The struggling of the child from terror, and the sense of suffocation from the introduction of the finger, precluded the possibility of an attempt to remove the halfpenny, and after great exertion by means of a probang, I pushed it into the stomach. I saw the child regularly every second day after the accident, for six weeks; and had given directions that the evacuations should be closely watched. The symptoms which presented themselves during this period, were, slight headach, short cough, nausea, loss of appetite, tense abdomen, slow bowels, and yellow tinge of skin. The treatment adopted, was the administration of demulcent fluids and aperients, which restored the natural state of bowels and removed other symptoms. I lost sight of the child until Monday the 24th of October ult., when on meeting a relative of hers, I requested the child should be brought to me; she looked pallid, but did not complain of any particular symptom, except pain of the left iliac region, which was increased by pressure; bowels reported regular; tongue foul. I directed repeated doses of pulv. rhei. and sulph. potass combined, which emptied the bowels largely, and on Wednesday morning the 26th October, the halfpenny passed off, having lain in the stomach and intestines for *three months*. The coin presented the appearance of having been submitted to the action of fire, and was partially covered with a brown crust, but not defaced.

I saw the little girl this day and she is in rude health. *In* connection with this case, I shall relate another which occurred to me about four years ago.

Speedy Passage of a Pin.

A young lady, while changing her dress, put some pins into her mouth, one of which she swallowed. The pins stuck in the œsophagus, but could not be seen or felt. She was greatly terrified and complained of acute pain behind the trachea, and said "the pin was making its way through." I forced it into the stomach with a probang, and she became at once relieved. Previous to my arrival at the house, her sister had given her a dose of castor oil, which affected the bowels freely the following morning, and the pin passed through the intestinal canal in *fourteen hours* from the time of the accident!

There is necessarily great alarm excited by the occurrence of such accidents, accompanied by great anxiety on the part of the patient and friends with respect to the constant administration of purgatives; but in my opinion, it is better to watch the case closely and combat any untoward symptom that may arise, and leave the rest to nature.—*Lancet.*

Case of Viper Bite.

Peter Bunny, about 30 years of age, was bitten by a viper (coluber berens) in the fore-finger of his right hand; this was at ten o'clock, A. M.; at twelve the arm was considerably swollen, and although so short a time had elapsed, his tongue was very much furred; pulse 140, and irregular; he felt much oppression at the præcordia, accompanied with hurried respiration, and great depression of nervous energy. The tumefaction was of an œdematous character; red lines extended in the course of the absorbent glands, which were tender and slightly enlarged. Forty drops of laudanum were immediately given, and the arm cupped over the swelling, but only three ounces of bloody serum could be obtained, I therefore bled him in the arm affected to about eight ounces. The whole extremity was constantly fomented with the aqueous solution of opium, and diluents and low diet prescribed. Three grs. of calomel were ordered every four hours, and a draught of ammonia and laudanum to be taken occasionally, if weakness or faintness should come on.

Second day. Two of the anodoyne draughts were taken, but he passed a restless night; great thirst; pulse 150, full; arm easier, but swelling increased, extending to the elbow; bowels purged. V. S. ad ℥ x; fomentation and powders to be continued, the anodyne draught, if necessary.

Third day. Gums affected; bowels purged; still experiences oppression at the præcordia. Omit. cal., and 5 gr. of antimonial powder to be taken every four hours. The fomentation of opium to be continued.

Fourth day. Much worse to-day; has had very little sleep; has been delirious and incoherent in his replies; skin jaundiced; pulse 140, small; tongue furred; bowels much relaxed; arm nearly well; swelling nearly gone; considerable echymosis over the swollen parts. V. S. ad ℥ xxiv., calomel resumed, with the addition of Dover's powder every four hours.

Fifth day. Relief was obtained from the V. S.; has had almost constant sickness; pain in the bowels with diarrhœa. Very feverish; great tenderness on pressure over the region of the liver. V. S. ad ℥ xii.; powders to be continued, and an astringent draught at bedtime. This evening continues much the same; complains of his gums. V. S. ad ℥ xii.

Sixth day. Much better; complete ptyalism; astringent draughts were ordered, and a gargle of the liq. plumbi sub. to be used frequently; nourishing diet. From this period his amendment was rapid, and he is now in the enjoyment of very good health.

Observations.—The points of this case which deserve particular attention are, first, that the immediate effect of inoculation was a powerful impression on the nervous system, indicated by rapidity of pulse, anxious respiration, &c. These symptoms being supplanted by those of inflammation and fever, which, as on very reasonable theory, may be maintained, were set up to dilute, or otherwise change, the virulent matter accidently introduced into the channels of the circulation. 2dly, That the inflammation being attended with œdema of the cellular tissue, clearly shows that the glands were obstructed. The quantity of virus must have been very small, as the wound was scarcely visible in the hardened skin of the fore-finger, and yet it was sufficient to excite active inflammation of the lymphatics. 3dly, *That, during the* mercurial excitation, an inflammatory affection of the liver, attended with jaundice, supervened; and although bleeding was repeatedly practised, the cerebral disturbance was not subdued until complete ptyalism had been established. I might add there were no sublingual pustules.—*Lancet.*

Aneurism of External Iliac and Common Femoral.—Tying of External Iliac.

Joseph Hicks, twenty-eight years old, came into the hospital under the care of Mr. Guthrie, on the 18th October, 1831, having a large pulsating tumor in the left groin. This tumor formed a convexity of considerable size, the greater part of its superior or anterior hemisphere being situated above Poupart's ligament, by which an evident indentation was made on its surface, and a lobulated form imparted to the whole. The pulsation was visible at three yards distance, and equally perceptible to the touch over every part of the superficies. Above and below the intumescence, the bellows sound was very distinct, but over the affected part it [illegible] ym was [illegible] has pain in the tumor when he lies on his back, or [illegible] side, even though the thigh be bent upon the pelvis; but by [illegible] on his right side, with the limb relaxed, no pain whatever was suffered, and the beating was remarkably diminished. The swelling readily yielded to pressure by the finger, and hence it was inferred that much coagulation had not yet taken place.

The patient has always been employed as a laborer; and, according to his own showing, has enjoyed almost uninterrupted health from his infancy. About two years before admission, he had the venereal disease, and was treated for it in the Lock hospital. No secondary symptoms supervened. He has always been a hard porter drinker, but this was rendered necessary, he says, by the very laborious nature of his employment. He never had any palpitation of the heart, nor any unpleasant sensations at the pit of the stomach; and he did not perceive the beating tumor till about three weeks before admission, when he discovered it in the right groin, nearly as large as a hazel nut. Since then it had grown rapidly, and was, on admission, as large as a swan's egg. This rapid growth the patient ascribes to a strain, which occurred whilst he was endeavoring to lift a great weight. He had no tumor in any other part of the body; and he was not aware that any of his relations had ever been affected with a similar disease.

Certain scars about the external fauces and neck, as well as the color and complexion of his face, eyes, and skin, indicate a scrofulous constitution. His height is about five feet eight inches; his shoulders are broad, and his chest moderately capacious. The skin appears to perform its functions sufficiently well; there are cicatrices on the glans penis and preputium. The locomotive functions are perfect. The voice affords no sign of disease; all the animal and natural functions seem well carried on. The alimentary canal and its appendages afford every indication of health. He expands the chest to its full extent, without pain or inconvenience. Percussion obtains laudable responses; the murmur of respiration is universal, vesicular, and of healthy character.

The action of the heart is regular, but a loud bruit de soufflet is evident between the systole of the ventricle and that of the auricle. The extent of sound is rather too wide, involving nearly the whole of the anterior surface of the thorax, and a great portion of the posterior. Pulse, at the wrist 72, small and regular, synchronous with that of the tumor and the heart. Transpiration and secretion of urine natural.

There being a slight tendency to pusillanimity in the patient's character, he was influenced by the persuasions of another patient, a malingerer in the hospital, and induced to [illegible] himself on the 4th November. He voluntarily came back on the 11th, convinced of the imprudence of his conduct. The swelling had attained a much greater magnitude, and its growth had chiefly taken place in the iliac portion of the artery. His constitution, however, was happily in the same buoyant state as before; and Mr. Guthrie having consulted his colleagues, fixed on the 19th instant for the performance of the operation.

Saturday, 19th November. The poor man is in very good spirits; he has slept fairly; his tongue is clean, and pulse 84, soft and regular. He has had considerable pain *in the tumor*, which is as large as a good-sized teacup, and projects above the inner-two-thirds of the crural arch, covered by the oblique and transversalis muscles. There is no discoloration of skin, but *it* is tender when touched. The bowels act well.

An immense crowd assembled in the theatre at one o'clock, to witness the operation, and the same want of order in the appropriation of places, was as conspicuous as it usually is in this theatre; an impenetrable phalanx of heads, which inclosed the operator, prevented all but a tithe of the spectators from seeing what was done.

The patient was introduced with some difficulty through the dense congress of people, and regarded, without perturbation, the amphitheatre of eyes which surrounded him. He was laid transversely across the operation-table, his thighs slightly flexed, and his shoulders supported by an assistant.

Mr. White consented to assist the operator. Before beginning, Mr. Guthrie stated his intention of tying the external iliac, if it should prove sufficiently healthy, but if otherwise, he *should place* the ligature on the common iliac. He should *accordingly make* his incision with a regard to both these purposes. The first incision merely divided the skin, and extended from a point in the linea semilunaris to the length of six inches, and terminated on Poupart's ligament about an inch from its ilial attachment. The surgeon divided with celerity the common tegument and the external oblique fascia. The division of the muscular fibres of the internal oblique and transversalis succeeded, and was performed with great slowness and caution. After this the most difficult task commenced, that of dividing the fascia transversalis, without injuring the peritoneum. This was successfully accomplished, chiefly in consequence of the anticipating care and prompt assistance of Mr. White. A good deal of time was consumed at this stage of the operation, and a *nick* was made in the peritoneum by an officious person, who, at the request of Mr. Guthrie, attempted to divide a portion of the fascia transversalis. A piece of shining intestine was seen protruding through the gap

The peritoneum was now carefully drawn back, and the external iliac exposed. There appeared to be an inch and a half, or more, of healthy vessel between the aneurism and the bifurcation of the common iliac. Mr. White pronounced this portion to be perfectly sound, and the operators accordingly proceeded to insulate the artery; this was done with the aid of a silver blunt knife; and the ligature was applied and fastened without difficulty, and the pulsation in the tumor ceased. The wound was closed, the lips were applied to each other, and several ligatures used; strapping, pad, and a flannel bandage, completed the dressing. The patient bore the operation with unexpected fortitude, and excepting a labored respiration, a little embarrassing to the operators, was tolerably docile. After being put to bed, pulse 96, and unequal.

'The operator manifested on this occasion extraordinary coolness. This quality is known not to be one of Mr. Guthrie's cardinal virtues, and some ill-natured people have not hesitated to declare, that it was acquired in this instance by reflection from the adamantine firmness of his assistant. Certain it is, that never was surgeon more judiciously or powerfully aided.

The patient was then placed in bed, and warm applications and frictions ordered for the limb affected by the ligature.

20th. The patient is cheerful this morning; he has had a sleepless night. He feels an appetite for food, but is only allowed a little tea. The tongue is clean; bowels free: the pulse at the wrist is 108; a little sharp. The temperature of the affected leg is 86; that of the opposite limb, 98. The pulse in the posterior tibial artery of the same limb, behind the internal malleolus, is regular, a little unequal, and synchronous with that at the wrist. It is not perceptible higher up the leg. Mr. Guthrie has ordered the limb to be constantly rubbed with flour. Bowels not opened; urine passed freely; the bandage slackened to relieve the tension, and the toes ordered to be constantly rubbed. Arrow-root diet. *Liq. opii sedativus, h. s.*

'21st. Slept somewhat last night; was seen by Mr. Guthrie early this morning; pulse 130; bled to 9 ounces. At 10, the pulse still 140, full, strong, irregular, and intermittent; tongue slightly furred; great thirst; cold sweat; bowels not opened; urine passed freely. Entirely free from pain; the limb had regained its natural temperature. In the evening the pulse had increased to 130; bled to 22 ounces, which he bore very well; bowels not opened, although he had 2 enemas in the afternoon.

22d. Right leg slightly colder than the left; abdomen tympanitic, no pain on pressure: pulse 60, full and strong; tongue clean; bowels not opened; had house medicine and an enema this morning; the medicine was instantly rejected. The stomach would retain nothing but tea. Was bled to 10 ounces; ordered to have *Haust. liq. am. acet.: Mist. camph.* every four hours, and the abdomon to be rubbed with *Lin. camphoria et ammonia*; to repeat the enema, and friction of the leg to be continued.—*Ibid.*

Case of External Fistula, probably connected with the Scirrhus of the Stomach.

September, 1831.—Mary O'Neil, æt. 50, having had four children, always enjoyed good health till 11 months ago, at which time she was seized with violent lancinating pain in the middle of the left hypochondrium, shooting towards the median line. It was dreadfully severe, and was alleviated by firm pressure. Shortly after, a gnawing sensation in the stomach supervened, and a craving desire for food. These symptoms continued, and three months from the commencement of her illness, she perceived, for the first time, a tumor to the left of, and a little below, the umbilicus. It was at that time the size of an egg, insensible to pressure, very hard, and the integuments over it not at all discolored. The gnawing sensation continued, but the pain was not referred particuliarly to the tumor. She then got decidedly worse, with violent retching and vomiting of bilious matter and mucus; the latter symptoms were more severe in the morning, and were mitigated by the use of food, which, however, in half an hour or an hour was generally rejected. She never vomited blood. The tumor had considerable pulsation in it, particularly when the woman was lying on her back. Her bowels now became obstinately costive, notwithstanding the use of purgative medicines of various kinds, which were often rejected especially pills.

Emaciation went on progressively, and her appetite failed. Eight weeks ago the integuments over the tumor became red, and she commenced the use of poultices by the advice of a medical attendant. The employment of these was continued diligently till ten days ago, when a small opening formed on the centre of the tumor without any pointing. Watery fluid was discharged for two days, in small quantities, which could be increased by pressure. On the third day she took a bowl of gruel, which immediately passed through the opening. (At this time Dr. Stokes first saw her, and two days after I accompanied him to visit her.) Since the occurrence of the opening, and for some time previously, she passed nothing from her bowels, but yellowish, frothy, mucus.

Sept. 13th. Present state of patient. An oval tumor, seven inches transversely, and five perpendicularly, exists in the umbilical region. The cicatrix of the umbilicus is over its lower part; its surface is smooth, very hard, and the tumor can be moved up and down, and transversely, to a considerable extent. When over the course of the aorta, a powerful impulse is conveyed to it. About the centre, and above the umbilical cicatrix, an ulcerated opening exists, about the size of a large split-pea; the integument around is livid, and on its edges are hard granulations. A bougie of gum elastic introduced through this opening, goes for some distance towards the left side, but cannot be got to the termination of the fistula in consequence of its irregular course. The attempt gives little uneasiness; pressure on the left side of the tumor increases the flow of the contents of the stomach, pressure on any other part does not affect it. The tumor is very prominent, and seems to extend underneath the edges of the ribs into the left hypochondrium. The abdominal parietes above and below it are retracted nearly to the spine. She has little pain at present, but there is a gnawing and burning sensation in the stomach; every thing fluid which she swallows is projected through the fistula, almost instantaneously, and with a considerable jet. Her stools are few, and consist merely of mucus and bile. She vomits frequently, and the matter ejected consists of food, or mucus, and clear watery fluid. Appetite bad; much thirst, especially for cold drinks; great emaciation; countenance sallow and sunken; eyes hollow, and lack-lustre; tongue dry, but clean; pulse small and quick.

A sponge was applied to the fistula and a roller over it, and she was advised only to take solid food, such as boiled mutton, and a little wine.

Opii, gr. j, *sumendum horâ somni.*

14th. Took some mutton yesterday according to advice, since which she has been in great suffering; has had constant retching, and feels as if the meat were stuck in her neck. She refrained from drink during yesterday, but this gave her great distress. The opium had no sensible effect, as she got no sleep. The fluids taken last night have soaked through the sponge. She complains of much burning pain in the stomach.

Wine and opium to be repeated.

17th. Complains that the wine increases the burning heat of her stomach and throat, but she says cold water relieves her; she is much sunk, and at times incoherent. There is total loss of appetite, she gets no sleep. There is great tenderness on pressure in the epigastrium, and over the tumor; skin hot; pulse very quick and weak; she passed some mucus from the bowels, and a minute quantity of fæces.

18th. Has been dozing much since, and at times is incoherent. Tenderness of epigastrium continues; no appetite; much thirst; skin hot; countenance flushed; tongue red and dry; pulse quick and wiry; the fluids taken no longer come through the fistula, though no obstruction exists externally. They are often vomited.

19th. Seems a little better; skin cooler; pulse not so quick; flushing subsided. She has taken some nourishment. Nothing passes through the fistula.

20th. The food has again commenced passing through the opening.

23d. Is very much sunk, no pulse at the wrist.

She died September 24th, at 9 o'clock, P. M.

Notwithstanding the most strenuous exertions on the part of Dr. Stokes (whose unwearied zeal in the pursuit of pathology and medicine has gained for him the esteem of every member of the profession) no *post-mortem* examination could be obtained.

Remarks—This case presents a combination of symptoms and interesting facts but rarely met with.

We observe that a woman of a habit previously healthy is attacked, without any assignable cause, with excruciating pain, relieved by pressure in the left hypochondrium. The case then might easily have been mistaken for a neuralgia, and probably would have been, if seen so early; the more so, as at that time no function was apparently disturbed, and as the disease came on at *about* a period when the uterine system undergoes a change which observations have proved to be often connected with such diseases.

But observe. No other hysterical symptoms accompanied it. This symptom (pain) is not a constant, nay, it is a rare attendant of commencing scirrhus of the stomach. Frequently it runs its surely fatal course without any symptoms but those depending on derangement of the functions of the stomach, and the physician remains in total ignorance of the intractable antagonist he contends with, till death closes the scene, and the knife unfolds the nature of the case., The sense of gnawing and hunger, which occurred in this case are frequent attendants of the disease, and depend on the diseased state of the stomach. We observe that these symptoms continued with little change for three months, at the end of which time a tumor appears, very hard, and with little sensibility, with lancinating pains through it; in short, having all the symptoms and characters of scirrhus; and yet it was mistaken for an abscess, from the rare occurrence of the disease in this situation. Now, also, the functions of the stomach undergo a change; violent vomiting and retching set in, which are worse when the stomach is empty; the patient becomes thirsty, and sleeps badly. These symptoms may be explained by the increasing size of the tumor, and the morbid process going on in the mucous membrane. The fact of food mitigating the patient's sufferings is not solitary. In many cases of dyspepsia, or other gastric affections, where there is a superabundant acid secretion, (perhaps also changed in quality,) anything which dilutes or saturates the acid, will, by taking away its irritating application to the stomach, give relief *pro tempore:* the food also begins to be rejected, and now we may suppose obstruction of the passage for food is commencing. As the disease advances, the appetite fails, the thirst increases, the bowels become costive, and emaciation rapidly advances; for absorption by the stomach is almost annihilated by disease, and little of the food passing down to the intestines, they cannot perform their office. During all this time the tumor has increased slowly, but without interruption, the latter symptom forming one of the best characteristics of the disease. Finally, the skin becomes of a dull-red color, but there is no pointing, no fluctuation; a small ulcer forms, and exit is given to a watery fluid, such as is commonly found in the cells of scirrhous tumors about to ulcerate; but there is no pus. Two days after, the fluid contents of some part of the digestive tube pass through the opening thus formed.

And now a question arises (which unfortunately could not be decided by *post-mortem* examination) as to the part of the digestive tube with which it communicated. Many circumstances favor the idea that it was with the pylorus, and they are these—the more frequent occurrence of the disease in that part,—the force and rapidity with which the fluid swallowed was ejected, (the latter circumstance would also point out that the stomach was contracted;)—and, again, no bile existed in the stomach, but bile passed through the bowels. Hence if it existed anywhere else, it must have been in the upper portion of the duodenum. Wherever situate it would appear that the intestine was quite obstructed; the stools consisted of mere mucus and bile, with a minute quantity of fæces,—the latter, probably produced by the action of the intestine on its own mucus. Tiedman has proved that this takes place. The woman herself expressed a conviction that no food passed. We should observe the torture inflicted by solid food and wine, and the relief afforded by cold water,—all showing that an inflammatory action was going on in the stomach. This stimulation being continued for some days, observe the result. A high fever sets in; the face is flushed; notwithstanding the anæmic state of the system, the skin is hot, the pulse is quick and wiry, the thirst is more urgent, and there is delirium. In addition there are, a red tongue, and much tenderness of the epigastrium. The physiological observer has little difficulty in reading the language of suffering nature; he can perceive, as the source of these alarming symptoms, an acute inflammation of the stomach. At this time another remarkable symptom occurs, the fluids cease to pass through the fistula, no doubt can exist as to the cause;—the swelling induced by the inflammation, has closed it internally. The inflammation subsides, as is shown by the symptoms, and the fistula re-opens. Soon after this the patient sinks rapidly. The vital principle, already exhausted by long suffering, is unable to bear this new excitement, and the patient dies.

The conclusions to be drawn from this case, are probably these:—

First. That a scirrhus of the stomach, or intestine may present externally, and, having ulcerated, may cause a communication between those organs and the exterior of the body.

Secondly. That in the treatment of such cases we should be cautious of stimulating the stomach; for (as in this case) an acute gastritis may supervene, giving rise to the symptoms peculiar to that disease, and hastening the death of the patient.

Thirdly. That the fistula formed, may be closed by inflammation for a time; and hence, by analogy, we may conclude, that where the intestine is nearly obstructed, though no fistula exists, it also may become entirely closed by inflammation, and prevent the passage of food, but that on the subsidence of that inflammation the passage may be restored.—*Ibid.*

Calculus in the Bladder, cured by Lithotomy.

Henry Gray, a fine healthy-looking boy, five years of age, had, according to the statement of his parents, been laboring under symptoms indicative of stone in the bladder, for more than two years, during which time he had been taken to two surgeons, and twice sounded, without the cause of his sufferings being ascertained. I could not account for his symptoms in any other way than by supposing a stone to exist in the bladder, although it had before eluded detection. I accordingly introduced a sound, but after a careful examination, also failed in ascertaining the presence of a stone, or any disease of the bladder which could give rise to his symptoms. Warm baths, opiates, and alkalies, were prescribed, under which plan of treatment his sufferings were so much alleviated, that I saw but little of him for about three weeks, when all his former symptoms had returned with increased severity, accompanied with a distressing irritability of of the rectum. The sound being again passed unsatisfactorily, I ordered him opium in the form of suppositories, and increased the dose of his medicines; this plan was persevered in for a week, without however affording that relief which he before experienced; and his symptoms continuing very unequivocal, I again introduced the sound, when the presence of a calculus was clearly and readily ascertained.

After a few days, on the 25th of October, in the presence of several friends, I performed the lateral operation. The urethra being laid open with the usual incisions, the gorget was applied and carried onwards; a gush of urine escaping at the time, satisfied me of its having entered the bladder; the forceps were then introduced, and after using what I considered to be only the requisite force to overcome the usual resistance of the prostate, without their being, apparently, in the bladder, as their blades seemed grasped, and the stone could not be felt, I withdrew them, as well as the gorget, and passing my finger into the wound, found that the opening was not large enough to admit of their entrance, and the force that had been applied, had pushed them into the soft parts at the side of the bladder. On re-introducing the staff, some difficulty was experienced in consequence of its point entering the passage formed by the forceps, but after enlarging the opening into the bladder, a mulberry calculus of the size of a small nutmeg was easily extracted.

An attack of peritoneal inflammation came on, the second day after the operation, which required the most active treatment to save the life of my little patient. Leeches and fomentations were freely applied, calomel was given in doses of 3 grains every three hours, the hypogastric region covered with a blister, and the vesicated surface dressed twice a day with mercurial ointment. In the course of a few days, under this treatment, all danger disappeared; and up to the date of writing this account, (Nov. 28,) he is in every respect doing well, although he has not yet quite regained his strength or color.

Reflections.—The above case shows the difficulty occasionally met with in detecting the presence of a stone, and the necessity of giving rather an evasive than a decided answer to questions that may be put respecting the discovery made by sounding, in all cases where the stone cannot be distinctly felt; for although this boy had been sounded in different postures, as well as in different states of the bladder, it was not till the fifth introduction of the sound, that the presence of a stone was accurately ascertained. It also points out the danger of making use of the least force in the introduction of the forceps, and the advantage which in all cases would probably attend the removal of the gorget for the purpose of ascertaining the extent of the opening into the bladder by means of the finger (which would afterwards serve as a director) before attempting to introduce the forceps, as it is impossible to judge with accuracy, from the gush of urine which may flow at the time, whether the prostate and neck of the bladder have been sufficiently divided, and more particularly as it is now and then even doubtful whether the gorget has entered the bladder, from the escape of the urine per urethram during the first steps of the operation. The good effects of calomel freely exhibited in the after-treatment of such cases are so well known, that I need only observe, an evident improvement occurred in this boy's symptoms, immediately his system became affected by it.—*Ibid.*

Successful Application of Lithotrity in a Case of Calculus in the Bladder.

Nov. 27, 1831. W. E., æt. 70, has a frequent desire to void urine; the call very urgent, hardly allowing time for the necessary preparation; the discharge is very slow and interrupted, and requires some straining; it is attended with a slight degree of pain in the glans penis only; during the night he is disturbed in this manner every two or three hours, more frequently on first lying down; the pain ceases immediately on his returning to bed, and he drops asleep; as soon as he gets up in the morning the discharge is more full; and though called upon is this manner three or four times during the day, he is quite able to attend to his ordinary occupations; the urine, in quantity and quality, is natural; the health is otherwise good.

His attention was first drawn to this complaint seven months ago, by the frequency of desire to make water during the night, So lately as four months ago there was little or no pain during the night, and during the day he was troubled scarcely more than usual.

Dec. 3. He arrived in London from Scotland to place himself under the care of Baron Heurteloup. The Baron examined the bladder with a catheter, and ascertained the existence of calculus.

5th. Two, P. M. The Baron proceeded to operate thus:—After injecting into the bladder a few ounces of warm water, the catheter was withdrawn, and the *perce-pierre* was introduced. With this instrument a small calculus was instantly seized and comminuted; a gum-canula of moderate size was then introduced, and the fragments were voided through it, their passage being assisted by the injection of more warm water: the operation lasted about three minutes. No pain was experienced, only uneasiness from a strong desire to empty the bladder, while it was distended by the warm water: the water was slightly tinged with blood. Ten minutes after leaving the Baron's house there was a strong desire to void urine; this urgency to evacuate the bladder returned every two or three hours during the day, and four times during the following night; urine slightly tinged with blood, which proceeded from the urethra; some ardor urinæ.

6. The urgency, and frequency, and difficulty of voiding urine are nearly the same as before the operation; no appearance of blood; urine high-colored and slightly turbid; health good.

8. The report similar to that on the 6th. Two, P. M. Again the *perce-pierre* was introduced, a few fragments of stone were seized and broken, and the detritus was washed out, in the same manner as before. During the day and following night, nearly the same symptoms as after the former sitting.

10. A gradual abatement of urgency and frequency; slight discoloration of urine.

12. Has voided urine only twice last night; less urgency and difficulty; urine nearly clear.

Two, P. M. The Baron introduced a silver catheter, injected warm water, then introduced a *curved instrument*, and searched again and again for calculus, without finding any; then he introduced an *evacuating canula*, to ascertain with certainty that there was none remaining, and through it filled the bladder, and emptied it in a very large stream several times, but without bringing away the smallest particle of stone. This was a proof that the calculus was completely abstracted.

After the last examination the patient travelled as usual to Stratford. During the afternoon he had an attack of rigor every time he made water. The urine was at first passed with difficulty, was a little tinged with blood, and contained minute portions of clot. The rigors ceased on going to bed, and were succeeded by a feverish state, which continued the following day. On the 14th the fever left him, and he was called upon to empty his bladder only three times during that day.

15. Has slept well; made water only twice, betwixt ten last night and six this morning; no urgency; slight cloud in the urine; since then he has been perfectly well.

I must here remark, that this patient was driven every time to the Baron Heurteloup's house, in an open gig from Stratford, which is at a distance of seven miles, and that, immediately after the application of the instruments, he was driven back again. This proves how little inconvenience was occasioned by the operations. I am inclined to think, however, that these drives produced the slight attacks of rigors which followed the last examination.—*Ibid.*

Case of Blue Spasmodic Cholera (?) at Knightsbridge.

The patient, a youth about thirteen years of age, residing with his parents at Knightsbridge, having been previously indisposed with the complaints above stated, was attacked on Sunday, the 1st of January, with slight diarrhœa and vomiting; the matter ejected having the appearance of a mixture of water-gruel and chalk. The pulse was at that time 73 and soft, the lips livid, and the countenance dejected. These symptoms manifesting themselves at the commencement of the attack, I considered it necessary to mitigate the action of the bowels, and relieve the vomiting, by ordering the patient an aromatic draught, with 20 drops of tinctura opii, to be repeated every two hours, should the intestinal action continue. On Monday, the following day, he appeared to have rallied; the vomiting and purging had ceased, and the lips had regained their color. The patient at this time felt himself decidedly improved. Towards the evening of the same day, I ordered him a draught composed of camphor mixture, and 30 drops of tinctura opii. On Tuesday, during the early part of the morning, he complained of cold and shivering, with considerable uneasiness in the epigastric region. His bowels had acted once since the day previous, but no urine had been passed. He complained of pain in his stomach with a degree of exhaustion, which indicated the approaching stage of collapse. I then prescribed a table-spoonful of brandy, with ten drops of the opiate mixture, to be repeated every half hour, until re-action should take place; likewise I recommended continual friction with flannel, and diluted spirit of ammonia. In two hours the body had regained its habitual temperature, and the patient appeared much relieved. Throughout the day he continued to improve, taking at intervals 20 drops of the aromatic spirit of ammonia, and 10 drops of tinctura opii. On the Wednesday, he appeared to be fast approaching a state of convalescence, not having had a motion since Tuesday, when, towards four o'clock in the afternoon, he became suddenly cold; the tongue, which had been furred, warm, and moist, since the commencement of the attack, was at this period clammy and quite cold; the abdominal spasms increased, the skin became dry and corrugated, and the pulsation almost extinct. No urine had been passed since the second day of the attack; the intellect was unimpaired. He continued taking the spirit of ammonia with opium; sinapisms were applied to the feet, stomach, and chest, accompanied with friction; at eight o'clock pulsation ceased in the extremities, the spasms increased, prostration became more evident, and the patient expired at four o'clock on the following morning. The mind remained unaffected until within half an hour of his decease, when a slight delirium supervened.—*Ibid.*

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Historical memoir on the employment of Ergot for the purpose of accelerating or determining Accouchement, and the expulsion of the Placenta in cases of inertia of the womb. By A. C. L. Villeneuve, M. D. &c. &c. [*From the French.*]

From long reflection on the subject, and from repeated evidences of the beneficial effects of *ergot* when judiciously employed, M. Villeneuve has been induced to present to the scientific world the results of his own experience, as also those of the different practitioners, who have tried the *secale cornutum* in cases calling for its administration. In France, a treatise of this kind cannot fail of attracting the attention of medical men—it is in that enlightened country that practitioners have labored so strenuously to improve the obstetric art, and a mere glance at the number of books which have been written on this subject, will satisfy the most incredulous that the French accoucheurs have given to midwifery all the attention which so important a subject demands.

Need it be said that the science of obstetrics has been so little understood, so unpardonably neglected among us, that by a majority of persons, it is deemed, if not entirely unworthy the attention of the physician, at least as undeserving of any particular regard. With an impression like this, how is it possible that midwifery should have received that degree of cultivation, which would have entitled it to an honourable place among the other important branches of medical science? Would not a conviction of this sort be the most effectual means of paralyzing every effort of the student, and of plunging him into the most debased ignorance with regard to this all important subject? That midwifery should have been thus neglected is to us an enigma, which does not admit of an easy solution. That its importance should have been thus slighted, the alarming accidents, so frequent in the practice of it, so little appreciated, is indeed an extraordinary circumstance, when we take into consideration that ignorance of the obstetric art, will always endanger the lives of two individuals at the same time.

We should remember that woman shares with the other sex the pleasure and pain common to human nature. She is the chief means of propagating the human family—it is in her womb that the offspring is carried for nine months; and when born, it is from her bosom that it receives its nourishment. Such are the noble attributes of the female, such the important functions she is called upon to perform. It is not, therefore, without reason that this tender being, the procuratrix, as it were, of our species, should have attracted the attention of the naturalist, commanded the admiration of the philosopher, and excited the enthusiasm of the poet. If then, in her social character, and on account of the conspicuous part she takes in reproduction, woman so deeply interests us, should not the dangers by which she is surrounded at the different periods of her life elicit the kind feeling of every intelligent and honest mind? Naturally timid and susceptible of impression, the approach of labour is a period of fearful apprehension for the female.

It has been correctly remarked by one who has done more for the improvement of obstetrics in this country than perhaps any other individual among us, if not more, than the whole profession combined:—"Perhaps, of all the causes which have tended to retard the advancement of obstetrics in this country, there is none more severely felt than that arising from the vulgar but specious objection that as labor is a natural act, it does not require the interference of art for either its promotion or accomplishment."

How shall we trace the melancholy consequences of an opinion like this! It has destroyed domestic happiness—it has filled the breast of many a confiding husband with deadly anguish—it has left him the protector of his motherless children, and closed the grave on the devoted object of his heart!

Nothing can be more agonising to the feelings than the spectacle, which it falls to the lot of accoucheurs but *too* frequently to behold. Even in the most ordinary cases, our sympathy will be extorted from us, for callous indeed must that heart be that would not undergo some emotion at the excruciating sufferings of the female during parturition. In the whole range of medical science, there is no branch which calls for more decision and firmness of character, and which more imperiously demands the exercise of sound and discriminating judgment. It is often in the power of the well-educated accoucheur to abridge, by timely and judicious interference, the sufferings of his patient; and this too in the most natural labor. But, without a perfect knowledge of the subject, without a knowledge of those principles on which the whole science is based, it were cruel—it were inhuman to attempt relief.

There is another argument brought forward, why we should not attach any importance to midwifery as a science, and were it not that it is frequently employed by men, whose opinions in other respects are entitled to some weight, we should not now advert to it. Arguing from analogy, it is contended that the woman during labour does not require our aid, because quadrupeds bring forth their young without any co-operation, and almost even without pain. It certainly must have been forgotten by those who advance this opinion, that the pelvis of animals differs in a remarkable manner from that of the human species. If Roussel, and certain other writers, had paid attention to this difference of conformation, they undoubtedly would never have entertained views so entirely opposed to the soundest principles of physical science. In the most part of quadrupeds, the pelvis, properly speaking, presents but one axis; the sacrum is nearly parallel to the vertebral column; the straits are but very slightly inclined, and the lateral portions of the pelvic cavity have about the same depth; the ossa ilea are straight and elongated, so that there exist no iliac fossæ. From this disposition of the parts, it is very evident that parturition is not attended, in these animals, with that intense suffering, which is so distinctly characteristic of this function in the human female.

To those who have not examined the subject, it may seem that the practice of midwifery among us is attended with great success. Such, however, is not the fact. The fatality in certain cases is astonishing, and the short experience we have had in this community has enabled us to come to the conclusion that death, when it occurs, is occasioned five times out of seven in consequence of the ignorance which prevails with regard to the first principles of the science. If the mechanism of natural labor were better understood, if, in a word, the philosophy of our art were more generally appreciated, we should have more successful practitioners. We should not be so frequently called upon to witness the dreadful destruction of children *in utero*. It is but too true that, in more than one instance in this city, the child has been brought away piece-meal, because, forsooth, in the apprehension of the sage accoucheur, there existed a *disproportion between the head of the fœtus and the pelvis of the mother*; whereas the labor might have been rendered perfectly natural by a very slight change in the situation of the head, which the skilful accoucheur under ordinary circumstances will be enabled to effect without difficulty.

In order that the reader may have a clear and comprehensive view of the importance of a thorough acquaintance with the mechanism of natural labor, let him suppose for a moment, that the pelvis of the female measures but three inches and a quarter in the direct diameter at the superior strait, and that the diameter of the fœtal head corresponding to this, exceeds the measurement of the pelvis. Under these circumstances, it would be almost impossible for the woman to be delivered without the interference of art, and, at the least calculation, not more than one in ten could possibly sustain herself if left to the operation of nature alone. If, through fear for the life of the mother or child, an ignorant practitioner determines on the use of instruments, vain indeed will be his efforts to move the head of the fœtus from the position it occupies. He now finds that the *forceps* cannot diminish the excess of diameter, and, as a last resort, his feeling heart, touched by the melancholy situation of the woman who has entrusted her life into his hands, *he resolves* to mutilate the child. The result of this heroic achievement the mother is soon made conscious of, by beholding the bloody spectacle held up to her as a proof of the sagacity of her accoucheur; and for this, though he is in reality nothing less than the murderer of her offspring, he receives *the sincere* thanks of his patient, who really imagines that, by his consummate skill, she has been miraculously preserved from the fate which awaited her.

How different will be the conduct of the well *instructed* practitioner, of him who comprehends prefectly the principles of his art. He saves the life of both the mother and child, and because he dispenses with the horrid butchery, which characterized the ignorance of the other, does not seem in fact to merit as full a meed of gratitude as the man, who murdered one, and hazarded the life of a second individual. The skilful accoucheur, aware from his knowledge of the pelvis and the correspondence of its dimensions with those of the fœtal head, that delivery cannot be effected without great difficulty, and often without compromising the life of one or both of the individuals, changes in the first place the direction of the long diameter of the cranium, by placing the occiput towards one of the sides of the pelvis, and he waits with security for nature to achieve the delivery. Should he arrive at a later period and find the strength of the woman exhausted, instead of the hand he employs the forceps for the purpose of altering the position of the head, and thus extracts it with advantage both to the mother and child.

Here is a case which, we fancy, will be acknowledged as amply illustrative of the position we have assumed; and that it is one, which might occur to any of us, every intelligent accoucheur will readily admit.

Accouchement is a natural function, but delicate and complicated; it depends not only on the structure and disposition of the organs of the female, and on the action which is peculiar to them, but likewise on the position of the fœtus, the manner in which it presents, and especially on the correspondence of its proportions with the straits of the pelvis through which it has to pass.

It is *natural*, terminates spontaneously and happily when these different conditions are found to exist in proper degrees. It is *preternatural*, *laborious*, and exacts the aid of the hand or instruments, when one or more of these conditions are wanting. The great object, therefore is to observe and distinguish in the most accurate manner all the phenomena, which constitute natural labour. From the correctness of this observation are derived the fundamental principles of our art.

It is a great error to imagine that a knowledge of obstetrics can be acquired by reading a few abstract precepts, or accumulating the various theories, which have been advanced with more or less ingenuity. With all deference, we contend that too much time has been consumed in speculating on the different hypotheses of authors, we have attached an importance, which certainly they do not merit, to the reveries of theorists, and, in canvassing their respective merits, lost sight almost entirely of the practical part of our subject.

With us, all stimulus to a proper investigation of this interesting branch of our profession seems to have been destroyed. The student has been accustomed to view it as a matter of secondary importance. And observing a want of energy on the part of those to whose care he has been committed during his studentship, he devotes himself ardently to all the branches, save midwifery.

We have recently conversed with individuals in the profession, who have had the candor to acknowledge that, when commencing the practice of the healing art, they were entirely unacquainted with the principles of midwifery, and we could name twenty who have told us, by way of illustrating the unpardonable neglect with which this subject has been treated, that in the first labor cases they attended, when making an examination *per vaginam*, and feeling the presenting part of the fœtus, their alarms were excited for fear it was some anomalous tumor, which would require a surgical operation!! Does not this "a tale unfold," calculated to strike terror into that portion of society, who are of necessity to become the victims of this execrable ignorance?—But to the review.

Mr. Villeneuve, in speaking of the toxicological history of the *secale cornutum*, remarks:—The fatal effects of this agent, when mixed with the food, were known, according to Mezerai, by Sigebert de Gremblour, as early as the year 1096, whilst many other learned men refer to Wendelin Thalius, a german physician who lived at the latter part of the 16th century, the first exact description of ergot, as well as the precise indication of its pernicious effects, which were observed in 1596, during an epidemic caused by this substance. In the years 1648 and 1649, Saxony and Sweeden were a prey to a similar epidemic. Twenty years afterwards, the same accidents occurred, produced by the same cause, at Blois and Montargis. However, it was *not until* the year 1670, that the Academy of Sciences of Paris was informed, for the first time, of the singular effects which occurred in *Sologne* in consequence of the inhabitants eating bread made with ergot.

The manifest accidents, he continues, resulting from the use of the *secale cornutum* at different periods, are of two kinds; 1st. Vertigo, spasms, convulsions, &c.; 2d. Gangrene or sphacelus of the extremities. These different accidents, which usually occur separately, and under circumstances which it is *not* our business to determine, constitute that morbid condition termed *ergotisme*, which is accurately described under this title, by M. Renauldin, in the Dictionary of Medical Sciences.

One fact, as remarkable as it is important, and to which we shall again advert is, that among the various ill effects produced by ergot, there is not one well authenticated instance of abortion or premature labor, either of a living or dead child.

It is also very remarkable that M. Tessier is the only observer who, to our knowledge, has made mention of abortions in consequence of the use of bread containing ergot, and he has done it in so laconic a manner, and with so few details, that it is very probable that this accident, far from having occurred to all the pregnant women who made use of this bread as an article of diet, was produced by other causes.

To this assertion of M. Tessier, we may oppose that of Taube who, in speaking of an epidemic which he had observed, positively declares that the pregnant women, affected with ergotism, were not subject to abortion, and that the lochial discharge of the recently delivered females was not in the least deranged.

In all cases, it appears that the abortions, which have occurred during the use of bread mixed with the ergot, have not been observed at the commencement of the employment of this grain, and that they did not mainfest themselves until the appearance of the serious accidents resulting from it, and when the principle of life was nearly extinct; all this can not be attributed to the specific action of the ergot on the uterus, and still less to an abortive quality, but rather to a profound alteration of the whole economy, as is observed in cases of violent traumatic injuries, acute diseases, and chronic affections more or less advanced.

It is very remarkable that authors have not made mention of any derangement or suppression of the menses, during ergotism; and we might, to a certain extent, deem it an omission or defect of observation, if Burghardt had not positively assured us that convulsive ergotism does not prevent the menstrual evacuation.

M. Villeneuve has entered with considerable minuteness on the above subject, but we cannot follow him at the present time more extensively in it, and shall proceed to another division of his interesting memoir.

In speaking of ergot relatively to its effect on the uterus, at the time of labour, he says:—"Without being able to indicate in what manner the obstetric properties of the ergot first became known, we cannot, on this account, assert with certain authors, and especially with Davis, that on observing the employment of this substance with the culpable intention of provoking abortion, physicians were induced to have recourse to it for the good of humanity.

"The secale cornutum, mentioned for the first time, in 1596, on account of its deleterious effects, was not known as an obstetric agent until the year 1688. It was then spoken of by R. J. Camerarius, who assures us that females in certain parts of Germany employed this substance in order to accelerate acchouchement.

"It was reserved for our honorable confrère and correspondent, M. Desgranges, accoucheur at Lyons, to appreciate and make known the singular property of ergot. This skillful practioner, having observed in 1777, that a number of *sages-femmes*, both in the city in which he practised, and its vicinity, administered ergot to women whose labors were tardy, was himself induced to make a number of trials with it, the greater part of which proved entirely successful. He has since published, at different times, the result of his practice and observations, and specified, with great care, the particular circumstances permitting the employment of this remedy, as likewise those, which contra-indicate its administration. We may, therefore, establish as a fact that the obstetric art is indebted to the learning of M. Desgranges for a perfect knowledge of one of the most valuable remedies in practice; a remedy which he has not ceased to propagate with all his efforts, notwithstanding strong prejudices and numerous difficulties of various kinds.

"At the time in which M. Desgranges published his first observations, the employment of ergot was scarcely known in France, except in the department of the Rhone. Now, the use of this remedy is beginning to extend itself throughout the different portions of the kingdom.

"According to Dittemer, it is likewise employed in Germany.

"In Florence, as also in other parts of Italy, in London, and especially in the United States of North America, the *secale cornutum* has been prescribed by very distinguished men. We may here remark that, in the latter country, this remedy already holds the rank which it deserves among the other therapeutic agents. This fact is demonstrated by numerous observations found in the journals of American medicine.

"Among the physicians who, with M. Desgranges, have contributed in an especial manner to the extension of this remedy, either by their practice or writings, we may mention M. Bordot and Goupil, of Paris; M. Chevreul, of Anvers; M. Pistre, who has given to the *sages-femmes* certain instructions for the use of this new medicine; Clarke and Davis, of London; Deweese and Chapman, of Philadelphia; and finally, Hosack, Prescot, and Stearns, of New-York.

"Hosack considers this substance as useful in certain morbid affections of the uterus, with debility; such as tympanitis of this organ, leucorrhea, &c. Davis has employed it for the purpose of facilitating the expulsion of polypi, or other excrescences of the uterus."

Our author mentions with great precision the different conditions required for the safe administration of this remedy, and we invite the attention of the reader especially to this part of the subject. Inveterate prejudices exist in the minds of certain practitioners against the use of ergot, and it is not an unusual circumstance to hear them urge as an objection—*that they have known it to prove fatal to the child, and frequently to produce a laceration of the soft parts of the mother.* Who denies the fact? But is it fair to adduce, as reasons why a remedy should not be employed, the ill effects which have resulted from an injudicious administration of it? Who, in these days of enlightened understanding, would discard from the number of therapeutic agents, opium, for the simple reason that it has proved destructive to life, when employed by ignorant or designing men? Who would object to the surgeon's knife, merely because, in the hands of an unskilful operator, it has produced a fatal hemorrhage? And may we not ask, who would proscribe the use of ergot in consequence of its having proved fatal, when improperly administered?

M. Villeneuve mentions three principal conditions which are essentially necessary for the employment of ergot, with a view to aid in the expulsion of the fœtus.

1st. *There should be no deformity of the bones of the pelvis, or of the soft parts of the mother, such as would produce an obstacle to the free passage of the fœtus.*

If the dimensions of the pelvis were below what is absolutely necessary for the easy expulsion of the child; if, for example, the antero-posterior diameter at the superior strait measured less than three inches and a half, the ergot, by determining the contractions of the uterus, without the possibility of overcoming the mechanical obstacle produced by the pelvis, would, perhaps, occasion a rupture of the uterus.

The same accident might be produced by any thing obstructing the passage of the fœtus, by a tumor situated in the pelvis, or by an extreme narrowness or rigidity of the orifice of the vulva.

The obliquity or any deviation of the uterus would likewise be an objection, at least momentary, to the employment of the ergot.

2d. *The neck of the uterus, soft and yielding, should be already dilated, and the labor should have continued for a certain time.*

The rigidity of the neck of the womb, as also the morbid engorgement of this part, contra-indicate most positively the administration of this remedy; for, the expulsive contractions of the uterus extending from the fundus towards its orifice, any obstacle occasioned by this latter to the regular course of these contractions, might produce a rupture in some other point of the organ.

In case of simple rigidity of the neck of the womb, provided it is not caused by plethora, M. Chaussier was in the habit of employing a remedy, which in his hands proved highly successful. He applied to the part offering the rigidity, i. e. to the neck of the womb, the extract of belladionna, in the following form:—

Extract belladon, ʒjj.
Cerat, ʒj.

Chapman and Prescat have recommended not to administer the ergot until the neck of the uterus has already begun to dilate, and M. Desgranges is of opinion that the dilatation should extend to four or five lines. However, certain facts appear to demonstrate that this remedy has been prescribed without inconvenience, and successfully too, in cases in which the dilatation of the neck was not so manifest. The following case on some account is interesting:—"A female having suffered considerably in three previous accouchements, and having arrived at the full term of her fourth pregnancy, took ergot before her labor had commen*ced; the orifice* of the uterus was not dilated, its borders preserved their thickness and hardness, and were not lubricated. In the space of half an hour the child was born." M. Desgranges, from whom we borrow this observation, and who is extremely reserved in the employment of ergot in cases of this kind, *asserts that* this remedy, under such circumstances, will not prove successful, except when the female is of a relaxed constitution, and has previously had children; the neck of the womb must likewise be supple.

M. Villeneuve is of opinion that it would be imprudent to prescribe this remedy in cases in which the labor, although at hand, had not declared itself by some premonitory signs, such as a general malaise, a sensation of weight towards the uterus, dull pains in this part, &c. By following this precept, we shall avoid giving the ergot hastily; for instance, in a case in which the female, deceived by painful sensations in the loins, bladder, intestines, umbilical region, ligaments of the uterus, &c. believes that she is about to be delivered, when in fact she merely experiences *false pains*. Moreover, how shall we know, at this early period, whether the uterus is incapable of performing completely all its functions, and whether nature really needs the aid of art in this last act of generation. If, from a general debility of the female, we are led to presume upon the inefficiency of nature, we should, before every thing else, according to the judicious remark of M. Desgranges, strengthen the individual by proper articles of diet, together with wine, &c.

There is another cogent reason why we should follow this excellent precept of M. Villeneuve, for, at this time, how are we to assure ourselves, with any degree of certainty, of the position of the fœtus—*a fact which must always be ascertained before administering the ergot.*

3d. *The fœtus must present in such manner as will permit its natural expulsion, and its size must not be out of proportion to the parts through which it has to pass.*

It is only necessary to be acquainted with the first principles of the obstetric art to realize in all its force the imperative necessity of strictly adhering to this precept. By inattention to it we shall inevitably destroy the life of one individual, and jeopardize the health of a second. Here again, we have illustrated to us the great necessity of understanding properly the mechanism of natural labor. There may frequently be slight deviations of the head—when it presents at the superior strait—which, if not rectified, will oppose the natural passage of the fœtus. Now, if we were to employ ergot in any of these deviations, what would be the consequence? In the first place, by the administration of this potent remedy we would excite the contractions of the uterus, which, extending from the fundus to the neck, and, in a presentation of the extremities, following the axis of the child's body, would necessarily expend their force on the orifice of the uterus, at which point the head is found, and the result would be congested brain, and death. We are confident this accident would not occur to an accoucheur who understand the principles of his art. By an examination per vaginam, he would discover the head to be improperly situated—he would first rectify it, and then, if necessary, administer the ergot.

Our author remarks, that, in a labor already advanced, at least as far as regards the dilatation of the neck of the womb, if the fœtus presented the inferior extremities, it would be more rational to terminate the labor with the hand, than to endeavor to awaken the action of the uterus.

The different preparations or forms under which the ergot is prescribed are the following :—

1st. The powder.
2d. Infusion.

3d. Decoction.
4th. Watery extract.
5th. Alcoholic tincture.
6th. Ethereal tincture.
7th. Alcoholic extract.
8th. Syrup.

Powder. The most simple of all the preparations of this medicine, that which serves for the basis of nearly all the others, and which enjoys greater virtue, as it is finer and more recent, is the powder. This preparation, admitted to be the most active and efficacious, is also that which is the most frequently administered. In consequence of its virtues, this powder has received the names of *pulvis parturiens*, (Stearns); *pulvis partum accelerans*, *poudre obstetricale*, (Desgranges); *poudre ocytique*, &c. (Bordot).

Like the other preparations of this medicine, the dose in which the powder is given will vary according to the particular circumstances of the female who may require its use. Thus, all things being equal, the dose should be greater for a female who has already attained a certain age, one who is of a lymphatic temperament, and one who is weak and not irritable. For a contrary reason, the medicine must be given in a smaller dose to a female who is young or *nervous*—*strong* or more or less irritable. The dose will likewise vary according to the particular sensibility of the stomach and uterus; according to the courage or pusillanimity of the female, the duration of the labor, and the time which has elapsed since the rupture of the membranes. The same rule must be observed with regard to the volume of the child, &c. It is established by the most distinguished authors as a fixed precept, that the ergot should be administered to women in their first labor with much more caution than to others.

The powder is given in the dose of ten to ninety grains and even more in the course of a labor.

It is generally administered in some vehicle—inert or nearly so—more or less abundant according to the dose. It should not be given in the form of pills, for it may lose some portion of its acidity, and its effects would be more tardy.

M. Villeneuve remarks that, given in too small doses, the ergot merely determines weak contractions of the uterus, which fatigue this organ instead of giving it the faculty of expelling its contents. As we are generally ignorant, he continues, of the degree of action which this substance *is* capable of exerting on the female to whom we administer it, and as too prompt a delivery might give rise to serious inconveniences, we should not, at the commencement, exceed twenty grains, given at one time, and in two doses. But if, when a certain time has elapsed after the ingestion of the medicine, an hour, for example, there should be no sensible effects observed on the uterus, we may again give the same quantity in one dose. If it should be necessary to administer a third dose, we may give thirty grains. If this should not be followed by any effect, it would be possible to prescribe a fourth dose of the same weight; but after this, prudence requires that we discontinue it, no matter what might be the tardiness of the labour, or the degree of inertia of the womb.

The mode of administering the *secale cornutum*, as also all other medicinal substances, will vary infinitely; and what has just been said in reference to the manner of giving it is far from constituting an invariable rule.

Infusion. The infusion is ordinarily prepared by putting forty or sixty grains of the powder, and even more; or a drachm of the broken grain, into a glass of boiling water; when it cools, and after having stirred it, we give this *infusion* in two equal doses, at an interval of an hour, adding as much sugar as is necessary. It is unneceessary to mention that it would be useless to give the second dose, if the first acted in a satisfactory manner. Weller is of opinion that this infusion, prepared even with two drachms of the powder, may be administered without inconvenience.

Decoction. The decoction of ergot (*decoctum parturiens* of some authors) is likewise prepared, either with the powder, which is boiled for a quarter of an hour in the dose of thirty to fifty grains in a glass of water, or with the broken ergot, carried as high as a drachm to two in the same quantity of liquid, and boiled somewhat longer.* This *decoctum* is administered in the same manner as the *infusum.*

As to the other preparations, says our author, of ergot, which have been mentioned, namely, the *watery extract*, the *alcoholic tincture*, the *ethereal tincture* and *syrup*, as we do not possess any facts concerning their effects or particular advantages, we shall not enter into any detail relative to them.

The *secale cornutum*, like many other medicines, may be administered in *lavement*. It is to this mode of administration alone that we must have recourse, when too great susceptibility of the stomach, nausea, vomiting, a repugnance on the part of the female, prejudices in the minds of the assistants, &c. will not permit us to give this medicine in the ordinary way. The sympathies and connexions existing between the rectum and uterus will necessarily be very favourable to the prompt action of the remedy. Ordinarily the ergot does not determine greater sensations in the intestine than in the stomach; it is, however, true that this medicine, administered in this way, continues but a short time in the rectum, which expels at least a portion of it, as it would an ordinary injection. It is especially on account of this circumstance, and also on account of the comparative want of sensibility of the intestine, that the ergot, administered *en lavement*, should always be in larger doses than when given in the usual manner.

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* M. Baudelocque has ascertained that the ergot, such as is ordinarily employed, does not lose, during an ebullition of ten minutes, more than twelve grains in a drachm.

Our author has written a very interesting chapter respecting the effects of ergot on the uterus. A short time, he remarks, after the administration of a proper quantity of this substance, i. e. at the end of ten or fifteen minutes, according to the individual disposition of the female,* the contractions of the uterus, or the uterine pains formerly languishing, weak, remote, or entirely wanting, manifest themselves in a manner more or less evident. Ordinarily, the first pains occasioned by this substance are not very violent, and yet they possess a character different from those which preceded them. When there exist pains in the *loins, they soon disappear*, and are succeeded by uterine pains, which soon become expulsive. If there should be uterine pains more or less evident, without being expulsive, this remedy will soon give them this latter character. In all cases, and in proportion to the sensibility or individual susceptibility, these pains soon acquire such violence, that the woman, who until then had scarcely groaned, utters the most piercing cries, which indicate both her sufferings and the violent uterine contractions, which are the cause of them. At the same time, the face is animated, the eyes become lively and brilliant, the pulse is accelerated, possesses force, &c.

As regards the placenta, observes M. Villeneuve, we do not know of any case in which the ergot was required to be used in order to effect its expulsion, when it had already been administered to determine the accouchement. We may conclude, that the contractions of the uterus solicited by the ergot, in case of inertia of this organ during parturition, are in all cases prolonged sufficiently to determine the expulsion of the placenta, and to oppose hemorrhage; for there is not an instance of this kind of accident after the employment of ergot, although it has frequently been given to women who, after other accouchements, had experienced more or less loss of blood.

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* Prescot made the following observation respecting the time required for the ergot to take effect :—

There were two in which the remedy took effect in seven minutes;
One in eight minutes;
Seven in ten ditto;
Three in eleven ditto;
Three in fifteen ditto;
Four in twenty ditto.

These remarks seem to confirm the opinion of Foote, who states that after delivery the uterine contractions, determined by the ergot, continue for twelve or fifteen minutes.

All the subsequent or concomitant phenomena of labor, such as the lochiæ, secretion of milk, &c. go on as usual.

The *modus operandi* of the ergot in determining accouchement is yet veiled in mystery. But it is evident that it produces this singular effect by awakening or determining the uterine contractions, which have been weakened or suspended during the labor. It is also pretty well understood that this remedy acts on the uterus merely in a sympathetic manner, for as the uterine contractions occur a short time after the injection or administration of the ergot, we cannot believe that it acts through the absorbent system, or in consequence of entering into the general torrent of the circulation.

In confirmation of the opinion that it is by sympathy that the secale cornutum produces its effects, M. Billard remarks that this medicine ceases to occasion any uterine contractions, when, after leaving the stomach, it passes into the small intestine, which has no known sympathy with the uterus. We may remark that when taken by the mouth, it does not act in an irritating manner on the intestinal tube, nor does it produce any sort of evacuation.

When ergot is administered *en lavement*, we may likewise establish that it is the result of a sympathetic action, for the rectum and uterus have different kinds of connexions, which have been demonstrated by a number of anatomical, physiological, and pathological facts.]

There is one very remarkable feature about the ergot, which it will be well to mention. Waller and Bailly have remarked that this substance does not appear to have any evident action on the uterus, except when this organ, containing the product of conception, is about to expel it; that is, when the female is ready to be delivered at her full term, or is threatened with abortion. It has already been mentioned that, among the accidents caused by the use of bread cor taining ergot, there is not one authentic case of abortion or premature labor, which was the immediate effect of it. Chapman tells us that, when administered to pregnant women, the ergot occasions a certain oppression about the uterus. M. Villeneuve mentions a case in which twenty grains of this substance were administered to a female about a month before the expiration of her full term, but without producing any effect.

We should be pleased, if time permitted, to take a more extended view of this very excellent memoir; but, for the present, we can only say that we think it entitled to the attentive consideration of practitioners, and recommend it accordingly to their perusal. G. S. B.

New-York, May 7th, 1832.

GLEANINGS FROM FOREIGN JOURNALS.

Memoir on Blennorahagic Orchitis; by MR. A. GAUSSAIL, *(resident of the Parisien Hospitals, and titular member of the Anatomical Society.)*

On examining the different treatises which have been published on venereal diseases, including the most recent, we find but few pages dedicated to the *consideration of that* inflammation of the testicles, and spermatic vessels, which is so frequently complicated with Blennorahagia.

The descriptions usually given of this disease, have been very imperfect, and most writers have said nothing regarding its anatomical characters. Having observed, during the last year, a great number of cases at the venereal Hospital, I have been led to make the following remarks; which will, I think, present an accurate history of this affection.

I conceived it necessary to make a few remarks on its different denominations; to establish some important statistical considertions which are the result of my observations, and, to which I shall revert in the course of my memoir.

1 *Denomination of the disease.* The terms hernia humoralis, gonorrhœa in the testicles, and venereal testicle have been used to distinguish an inflammation of the testicle which has supervened during the course of a blennorrhagia. As they all give an erroneous idea of the nature of the disease, they should be abandoned. I shall not stop to point out the unappropriateness of each of these denominations, but shall take the last as an example.

The denomination venereal testicle, has been used by some modern authors to designate this disease ; which, if correct, would lead us to a mercurial course of treatment for its cure, which, in the course of this memoir, I shall show to be altogether unnecessary. The word Orchitis, comes from the Greek ορχις testicle, and the termination *iti's* is added to designate an inflammatory affection. In my opinion, this term is not sufficiently comprehensive, as it only alludes to the condition of the testicle ; but, as it gives us a correct idea of the nature of the disease, I shall adopt it, giving it, however, a more extended signification ; that is to say, by it I shall designate an inflammation, not only of the testicle, but of the epididymis and vas deferens.

2. *Considerations and statistical results.* The whole number of belennorrhagias, observed during the first eight months of 1830, in a portion of the service of M. Cellerier, consisting of 120 patients, was 147. Blenorrhagias complicated with chancres, buboes, phymoses, &c. 68 ; simple blennorrhgias on the entrance of the patients in the hospital, 11.* Among these eleven, (who were admitted on particular considerations,) three were affected with orchitis during their stay in the hospital. From observations I have made, I think there is one case of orchitis in from 8 to 10 of blennorrhagia.

3. Of the 68 cases of blennorrhagia complicated with other syphillitic symptoms, 2 only were complicated with orchitis. Finally, we have observed 68 cases of blennorrhagia, complicated with orchitis, and without any other syphillitic symptoms at their entrance in the hospital.

The whole number of cases of orchitis was 73 ; of these, 45 were of the right side, 24 of the left ; and, in four cases both testicles were inflamed. Orchitis produced by some known cause, more or less energetic 51 ; orchitis supervening without any appreciable cause, 22 ; orchitis supervening during the two coldest months, (Jan. and Feb.) 28 ; orchitis appearing during April and May, 19 ; orchitis appearing during the first week of the blennorrhagia, 5 ; during the second week, 4 ; during the third week, 5 ; during the fifth and sixth weeks, 39. Two months after the attack, 2 ; three months, 1 ; five months, 2.

In four cases, the urethral discharge had entirely ceased at the time the inflammation had attacked the testicle. In sixty-seven cases the discharge and the other symptoms of blennorrhagia had diminished considerably, at the time of the attack of orchitis. In two cases the symptoms continued to be intense at the time the orchitis appeared. In thirty cases the running, and all the other symptoms disappeared during the administration of remedies for the cure of the orchitis. In forty-three cases, the discharge continued after the cure of the orchitis, and required particular treatment.

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* I should here remark, that cases of simple blennorrhoea are not generally admitted in the hospital, they are considered out-door patients.

Acute orchitis cured, 51; acute orchitis, becoming chronic, 9; chronic orchitis at the entrance of the patients in the hospital, 13; mean duration of the acute form of orchitis, 35 days.

In nearly all of these cases, the resolution was incomplete, as the epididymis was more or less tumefied and painful on pressure, at the time the patients left the hospital.

Independently of this engorgement, I have observed the following terminations; by suppuration; by tuburcular degeneration followed by death, 1; by slight effusion (which was quickly absorbed,) in the tunica vaginalis, 7; by a complete hydrocele, which required puncture, 1; by gangrene of the scrotum, 1; the latter termination, gangrene, should be considered an accident, inasmuch as it occurred during the first days of the disease.

4. *On the nature and anatomical character of the disease.* It was for a long time believed that the cause of inflammation of the testicles, was a direct application of the matter of blennorrhagia, consequent on a suspension or dimunition of the discharge. Astruc believed that the inflammation *of the testicles,* and spermatic cords, which is so frequently observed in blennorrhagia was caused by the accumulation of semen in the spermatic vessels, which accumulation was facilitated by the admixture of virulent particles with it, which became thickened. This theory has been re-produced lately, with however, the exceptions of the virulent particles and the thickened semen. Another opinion is, that in persons who have been accustomed to considerable seminal evacuations, they being compelled to remain continent during an attack of clap; the seminal fluid accumulated in such quantity in the spermatic vessels as to excite inflammation of the testicle. If this were the true explanation of the cause of the disease, we should observe orchitis in other diseases, during which patients are generally continent.

If it had been urged that the inflammation of the testicles is owing to their secretory action being increased during blennorrhagia, I should have concurred with them.

The pain and erections which generally accompany blennorrhagia excite the testicles, and increase their action, the patient will complain of pain in the testicle and spermatic cords, without any other symptom of inflammation being present. That there is great sympathy between the urethra and testicles, we cannot doubt when we see orchitis produced by the introduction of a bougie.

The actions of the testicles being increased, the semen is secreted in greater quantity, and it may possibly possess irritating qualities, which may irritate and inflame those vessels in which it is contained.

During an attack of blennorrhagia, we find that spontaneous seminal evacuations invariably remove those uneasy sensations which are felt in the testicles. Whenever the urethra is irritated, the testicles become excited ; a knowledge of this fact will enable us to understand the reason why the testicles are so frequently inflamed by slight causes.

If orchitis were the result of metastasis, it should always follow the cessation of the blennorrhagia, which is far from being observed. In four cases only have I witnessed the sudden cessation of the discharge ; occasionally the inflammation passes from one testicle to the other. I have known this to occur three or four times. Although it is rare to see orchitis produced by metastasis, still it must be admitted that it occasionally occurs ; in such cases the recurrence of the discharge cures the orchitis.

I will here cite a case, in which the metastasis affected the testicle secondarily. A man of good constitution was admitted in the hospital, to be treated for an ordinary blennorrhagia. He was prescribed emollient drinks and local bathing, which arrested the discharge in two months. He received, at this time, a blow on the lower part of the right leg, which caused the formation of an abcess, which for three months supurated profusely; at the expiration of which time it healed suddenly, and the testicle of the side became inflamed to the degree that he was compelled to re-enter the hospital. Orchitis is very often the result of displaced urethral irritation, which displacement may be caused by some physical force acting directly on the testicles. In these cases, the dis-placement of the irritation is incomplete, for we see that the urethral discharge continues. In many cases where no physical injury can be assigned as a cause of orchitis; we must attribute it to the extension of the irritation along the ejaculatory ducts, the vesiculæ seminales, and the vas deferens to the testicle. The testicles, in consequênce of the urethral irritation, being in a state of excitation are more liable to become inflamed than in their ordinary condition.

In some cases I have observed the course of the inflammation, affecting successively the spermatic cord, the epididymis, and the testicle; the inflammation of the testicle being invariably preceded by a sense of heaviness and pain in the groin of the side affected. In support of this explanation of the causes of orchitis, we have the authority of Swediaur, who arrived at the same conclusion from observations made on his own case.

A case of inflammation and supuration of the ovary in a woman to whom was administered copaiva during the acute stage of a blennorrhagia, was observed by my friend Cullerier.

I have observed in women the extension of the vaginal inflammation to the neck of the uteras. I can readily conceive the reason why the ovaria are not more frequently affected by the extension of the inflammation of blennorrhœa, many of the conditions necessary for the production of orchitis are wanting, being more profoundly situated they are not so much exposed to the influence of physical causes, the inflammation occupying a considerable surface is less disposed to extend itself, and if it does, it affects the uteres, more particularly where it may become chronic and cause more or less disorganization. With regard to the pathology of orchitis—Hunt is almost the only author who has spoken of it. He has alluded to the varicose condition of the veins of the chord and testicle, to the adhesions of the tunica vaginalis, and to the purulent depots in the upper part of the gland. It is difficult to ascertain the exact pathalogical conditions, as the number of those who die during an attack of this disease are very few. During the year I remained at the Venerial Hospital but three deaths occurred among patients affected with it.

In one of these cases the individual had for ten days previous to his entrance in the hospital an inflammation of the epididymus and chord of the right side, which extended to the left. The intellects of the patient were so much impaired in consequence of an attack of acute arachnitis that he could give no satisfactory history of his case. His genital organs were examined after death and the following appearances were observed,—The seminal vesicles were more voluminous, solid, and more highly injected than natural, they contained a quantity of yellowish matter which had a granulated appearance, the vasa defferentia were large, their canal was diminished in calibre and filled with matter similar to that observed in the vesiculæ seminales. The epididymii were harder and more voluminous than natural, and of the colour of lees of wine, which discoloration did not extend to the testicle. The left epididymis was more affected than the right; they contained matter analagous to that in the vesiculæ seminales heretofore described. The sac of the tunica vaginalis contained a small quantity of reddish serum, but with the exception of being more injected than is usually observed, the testicles were healthy. The bulbous and prostatic portions of the urethra presented traces of inflammation; the mucous lining of the bladder was in the state of chronic inflammation.

In another case the patient had for four or five days, orchitis of the right testicle. The testicle was twice the natural size, and the spermatic chord engorged and indurated. This patient died eight days after his entrance in the hospital of an ataxic fever, which prevented us from using active treatment for the cure of the orchitis. On examination after death I found the vesiculæ seminales distended with a considerable quantity of thickened semen which did not possess the yellow color which was remarked in the preceding case. The left vas differens was engorged, but the engorgement did not extend beyond the posterior opening of the inguinal canal. That of the right side on the contrary was engorged, thickened, and injected through its entire extent; the spermatic veins were slightly dilated. The epididymis of the same side was of twice its ordinary volume, and much indurated; the testicle contained a quantity of sanguinolent serum which escaped when the tunica vaginalis was incised; the tunica albuginea was thickened and highly injected; the proper tissue of the testicle was harder and more highly coloured than natural; the urethra was injected particularly at its bulbous and prostatic portions.

In the third and last case, the disease was in some degree the cause of death. This patient was of scrofulous diathesis, and had had two attacks of syphillis which were treated with mercurials. He was admitted in the hospital on the 27th of January, for the cure of a blennorchagia, which was treated with local baths and emmollient drinks for six weeks, at which time without any appreciable cause he was attacked with orchitis of the right side, the usual treatment removed the inflammatory symptoms, but there still remained some engorgements of the glands which soon became affected with lancinating pains, the patients health failed rapidly, an abcess formed in the anterior abdominal parietes to which succeeded a colliquitive diarrhœa which destroyed him on the 13th of May. He had been affected with retention of urine which was with difficulty obviated by the use of the catheter, which, difficulty of introducing the catheter was ascertained to be caused by an enlargement of the prostate gland. Five or six days before death the introduction of the catheter became more easy, and a great quantity of pus issued with the urine. On introducing a finger in the rectum the tumefaction of the gland was ascertained to be less considerable. On dissection, we found the prostate gland almost entirely destroyed; it did not possess its granular appearance, but was converted into a sac filled with pus and urine. The cavity of the bladder was considerably diminished, and its coats were much thickened; a communication existed between it and the abcess in the prostate; its mucous membrane was inflamed and in many places eroded, the membranous portion of the urethra was implicated in the abcess of the prostate, the spongy portion presented some superficial ulcerations.

A quantity of softened tuburculous matter was found in the epididymis of the right side, it was observed also in the body of the testicle, it appeared to compress, without altering the proper tissue of the gland, the vas deferens was considerably engorged, and the vesiculæ seminales were hypertrophied, and contained some purulent depots. The superior portion of the lungs contained tubercles in different stages.

I will here allude to those excrutiating pains which are occasionally experienced after the sudden suppression of a blennorrhagia. M. Cullerier has mentioned in the article blennorrhagia in the "*dictiónaire de medecine et chirurgie practiques,*" a case where the pain was so excessive that the patient begged the testicles might be extirpated. I observed shortly after the publication of that article a similar case in which the pain, although not so severe as in that cited by M. Cullerier, yet was sufficient to impair considerably the general health, and would without doubt have had a disastrous termination had I not, fortunately for the patient, been able to remove it. From the remedies which I have found most successful, and from the irritable habits in which it is observed, I am inclined to consider it as a variety of the neuroses.

Etiology.—Some individuals are peculiarly susceptible to this disease particularly those who have had a previous attack of it. We have already indicated its principal predisposing causes.

During the existence of the principal predisposing cause of this disease, violence directly applied to the testicle is sufficient to excite orchitis. The right testicle is more frequently inflamed than the left, although the contrary has lately been asserted.—My observations lead me to believe that cold has more influence in exciting this disease than has generally been assigned to it.

Orichitis is frequently the consequence of using irritating injections and stimulating balsams during the acute stage of the disease. In three cases which came under my observation it was evidently produced by the use of cubebs.

Irregularities in diet and regimen, and the use of alcoholic drinks during a blennorrhagia frequently produce orchitis. In these cases the testicles are inflamed in consequence of the sudden cessation of the running. In three or four cases only has it appeared to be the consequence of coition, perhaps the rarity of these cases may be attributed to the fact, that patients seldom have connection during the acute stage of a blennorrhagia

5. *Invasion, symptoms, progress, duration, diagnosis, terminations and prognosis.*

Orchitis is seldom observed during the acute stage of blennorrhagia, when it does occur it is generally caused by improper treatment.

It generally appears when the inflammations have subsided. It frequently occurs, during the fifth week of a blennorrhagia, I have known it to occur as late as seven months and a-half from the attack of blennorrhagia. In this case all the inflammatory symptoms had subsided and there remained but a slight gleety discharge from the urethra, when after a march of twenty leagues the patient was attacked with orchitis, the inflammation in this case was unusually severe. This and many other similar instances lead me to remark that the intensity of the inflammation of the testicles is not in relation with the inflammation in blennorrhagia, for I have observed a violent orchitis the consequence of a mild affection of blennorrhagia. Orchitis is generally preceded by painful sensations in the groins, and an increased sensibility of the testicles. In many cases which I had an opportunity of observing, the patients experienced painful sensations in the perineum, showing that the bulbous and prostatic portions of the uretha and the vesiculæ seminales are attacked with inflammation. The irritation now extends along the vasa deferentia (generally it is confined to one) until it attains the epididymis which becomes, particularly at its lower part, tumid and painful, from thence the inflammation extends rapidly to the testicle, and we have all the phenomena of orchitis. The testicle attains in some cases four times its usual size and becomes the seat of intense pain which extends along the spermatic chord; the scrotum becomes tumefied and redened, its veins are engorged with blood. The system now sympathises with the local disturbance, and the patient has cephalalgia with nausea, and vomiting. In some cases the engorgement, although considerable, is indolent, and incommodes the patient solely by its weight and size. In orchitis, without doubt there is an increased secretion from the tunica vaginalis, which is generally absorbed as the cure progresses; as the morbid phenomena just described, develope themselves, the symptoms of urethritis undergo some change. I have asserted that orchitis is rarely produced by metastasis; thus we seldom observe the entire disappearance of the blennorrhagia, which would be essential to establish it. In a large majority of cases, we observe that the symptoms of urethritis subside as those of orchitis are develloped. Occasionally when orchitis has been excited by external agents, during the acute stage of a blennorrhagia, or has been treated irrationally, some of the symptoms of blennorrhagia persist, and are even augmented, after the orchitis has been subdued. The diagnosis of this affection is simple, it can be confounded only with an œdematous state of the scrotum, which I have observed in three cases only, and which disappeared rapidly by using the vapour-bath.

The mean duration of the orchitis is from 30 to 35 days; it most frequently terminates in resolution. Abandoned to itself, or treated irrationally, it may become chronic, and continue a more considerable time. In the majority of cases, the resolution is incomplete, the epididymis remaining hard, engorged, and slightly painful on pressure, for a long time; in some cases, this engorgement continues during life. This is not ordinarily the case with the testicle, except the disease become chronic. It has been asserted that the testicle diminishes in volume, after an attack of this disease. I have in one instance observed it terminate by suppuration. In this case the inflammation was caused by external violence, a number of small abcesses formed, although active antiphlogistic treatment was adopted. In one case, gangrene of the scrotum occurred, and when the sloughs separated the testicle, was entirely bare. The wound after a prolonged supuration granulated, and the testicle became covered with a solid cicatrix, which adhered intimately to it. It has been doubted by some, whether a simple orchitis may cause schirrus. Without detailing the different opinions on the nature of cancer, I shall here remark, that my observations lead me to believe that the engorgements, which are the consequence of orchitis, may degenerate into schirrous.

Prognosis.—This disease generally terminates favorably; in cases of great induration, or schirrus, the removal of the testicle may be considered necessary. Patients who have had orchitis, are ever after peculiarly liable, to a recurrence of it, during a blennorrhagia.

Treatment.—The antiphlogistic treatment is indicated in this disease. General bleeding, unless the inflammation is so intense as to derange the whole system is seldom necessarry as it has little influence on the local symptoms.

Local bleeding by leeches, is very beneficial. The leeches should not be applied to the scrotum, as troublesome ulcers occasionally follow their punctures; again, they may open one of the distended veins and cause a profuse, and even a dangerous hemorrhage. The practice generally pursued at the venereal hospital, is to apply them along the trajet of the spermatic cord The frequency of their application should be regulated by the activity of the inflammation; in mild cases warm baths, and a horizontal position are sufficient.

When the inflammatory symptoms have subsided, and there remains but an engorgement of the gland, M. Culleriet uses the ointment of the hydriadate of potass, to the extent of from half to one drachm, rubbed lightly on the tumefied parts, once in 24 hours. A strong solution of carbonate of potass has been used with advantage in these cases. It has however, the effect of causing an erythmatous, or vesicular eruption on the scrotum, and if it is used for a considerable time, it causes an absorption of both testicles. The different preparations of iodine are said to cause an atrophy of gradular parts; which effect I have not observed, although I have witnessed its extensive use in diseases of the testicles.

The tincture of iodine is also useful, as are also pills of calomel and soap.

The bowels should be regularly evacuated as foecal accumulations impede the venous circulation, and keep up the engorgement. If after the inflammatory symptoms have subsided, there is considerable pain, opiates should be administered. In such cases Mr. Cullerier uses the following lotion;

℞. Aqua Laar.Ceras,.	℥ ij.
Ether, Sulph.	ʒ *ss.*
Ext. Belladon,	gr.xxiv.

In obstinate cases of chronic engorgement, we have succeeded in curing them by the internal exhibition of mercury and fumigations of cinnaber. The two last agents, which are not to be considered as acting specifically, often succeed when all others have been found ineffectual.

It only becomes necessary to recall the blennorrhagic discharge in cases when it has been recently and entirely suppressed. The more prudent method of using this is by introduction of the emplastic bougie; or of blennorrhagic pus.

I have adopted this mode of proceeding, in several cases with entire success. I have found it useful to re-produce the blennorrhagia in cases which are attended with great pain.

In treating this disease if we have reason to believe that it is syphilitic, there can be little doubt regarding the propriety of using mercury, but as in the generality of cases of orchitis it is entirely simple in its nature, the administration of mercurial preparations are not only useless but may be prejudicial.

Case of malignant small-pox, with petechiæ, after vaccination?

—— Parkhust, a policeman, twenty-two years of age, who had been vaccinated, and, previous to the present attack, was in every respect healthy, was taken ill on Saturday, Jan. 7, with febrile symptoms. On the next day, petechiæ and vesicular eruption appeared, and on the following Thursday he was admitted into the London Fever Hospital. When admitted his nose was quite black, being covered by a large vibex which extended over part of the forehead. The entire surface of the body was covered by petechiæ, giving it a *dark-blue color*. *Some* vesicles, slightly elevated, were with difficulty discovered, by the aid of a microscope, on the thighs, and also, without that assistance, on the left arm, near the elbow, containing a little fluid.

The man was able to stand when admitted, and after he had been in bed sometime answered, distinctly questions put to him. He stated that he was seized with vomiting and purging of blood on Sunday, had great pain in his chest and bowels, and considerable difficulty in breathing, so great indeed as sometimes to cause him to fear it would produce suffocation. He had passed blood with his urine, and from his nose. The conjunctiva of each eye was suffused with blood, and raised by infiltration. Several of the stools he last passed consisted nearly of pure blood. Pulse about 120, weak; skin much above the natural temperature; tongue moist, but coated with yellow fur; strength much reduced. His mind was quite collected till he died, five hours after his admission.

Some ether, with camphor, was administered after his admission. What measures had been adopted previously were not known. An examination of the body was made at twelve o'clock the following day.

Sectio Cadaveris.

The head.—Superficial vessels of the dura mater gorged with blood: slight effusion under the arachnoid membrane upon the hemispheres and under the base of the brain. The substance of the brain not much changed.

Chest.—Anterior surface of the lungs pale and crepitant; the posterior dark and gorged with black blood. Several small echymoses under the pleura; the upper lobes on either side adhering to the pleura by old adhesive bands. On cutting into the lungs they were found gorged with dark blood in the greater part of their extent. The heart appeared to be small. No fluid in the pericardium, and not a drachm of blood in either of the cavities of the heart.

Abdomen.—Small intestines somewhat distended with gas, and of a dusky hue externally. On laying them open in their entire extent, a dark-colored matter appeared, as if painted on the mucous membrane, resembling blood slightly decomposed. The large intestines greatly contracted throughout; mucous membrane marked by numerous echymoses of a rather bright color. The follicles appeared considerably developed from effusion in the submucous cellular tissue. The stomach contained a small quantity of fluid which smelled of ether. Its mucous membrane was softened and echymosed; two or three larger echymoses at the pyloric extremity; these exudations were seated in the submucous cellular tissue in the mucous membrane itself. The spleen unusually hard. Liver enlarged, weighing six pounds; of a yellow color, and even in its texture. The pancreas hard, and granules much firmer than usual. In the cellular tissue around the kidneys there was considerable ecchymosis, taking the course of the ureters. The mucous membrane lining the left ureter was stained by blood; the left perfectly free. Internally the pelvis of each kidney was filled with dark coagulated blood: similar ecchymoses existed along the iliac vessels. The iliac glands large and dark-colored. The bladder was contracted, containing a little urine with blood; its mucous membrane similarly ecchymosed as in the intestines.

A discussion which extended through nearly the whole of this and the following Monday evenings, ensued upon the case, but the length and almost innumerable flexions of the debate preclude us from reporting it with advantage, and we therefore simply record the case.

USE OF THE RED GLOBULES IN BLOOD.

In the course of the second evening a conjecture, worthy of consideration by pathologists, was thrown out by Dr. Whiting, as to the sudden tendency to general hæmorrhagic effusion which will occasionally occur both in persons of a debilitated and strong habit of body. He submitted whether from the very opposite characters of constitution in which it would appear, it was not probable that the disease existed in the blood itself, and that the hæmorrhages were produced in the following manner. The red globules of the blood have hitherto had no appropriate purpose assigned to them by physiologists. But some distinct office they undoubtedly have. Do they not float in the mass of the blood, destined to act at the extreme mouths of the the capillaries as mechanical valves to prevent the effusion of the blood as it presses forward to the termination of those vessels, by blocking up the exits, and obstructing the egress of the fluid? This would be the normal state of the blood and capillaries; but from some unknown cause the globules may be broken down or produced in fewer numbers, or destroyed, and then a deficiency of "valves" would permit the hæmorrhage which it is otherwise their duty to prevent. Dr. Whiting mentioned that he found by experiment many years since, that the blood in such cases shows the loss of two-thirds (we think) of its red particles.

The more venerable portion of the Society, and some others, probably, regarded these as "ingenious speculations." To such speculations, however, does the study of *pathological anatomy* inevitably lead, though little hope can be entertained that their value will be thoroughly appreciated, until the doctrines of Andral and Reynaud are more generally received among the practical men of the profession in this country, and medicine is studied as a more exact science.—*Lancet.*

New method of dividing the Facial Nerve. By E. B. SHERRIFFS, *Esq., Surgeon, Brechin.*

During the past summer my advice has been requested in several very distressing cases of neulralgic affections in the face, the most of which the attending surgeons have considered as seated in the portio dura of the seventh pair of cerebral nerves. In such cases I have been very unwilling to hazard my opinion as to the nerve affected, more particularly when I considered Bell's experiments on the nervous system with a view to prove that certain nerves have certain faculties, and that pain can only be felt in nerves of sensation. Should this be considered as conclusive proof, then dividing this nerve could be of no use. He considers it a respiratory nerve, and I now entertain little doubt as to the accuracy of his assertion; hence I never would divide the portio dura, unless with a view to assist in weaning the sceptic from his unbelief.

With the above intention, and to assist in confirming the opinions of this deserving surgeon, the rules given for performing the operation are so intricate and so pregnant with danger to the patient, that I never saw any one who would attempt the operation; and it is well known, and deeply to be lamented, that anatomical knowledge is too scanty among the generality of country surgeons in Britain, to exculpate them in undertaking any such operation, without having at the time intentionally studied the parts on the dead.

I shall just now give a brief account of the operation for dividing the nerve as formerly recommended, and as it passes from the foramen stylo-mastoideum; and I am sure no man in his sound senses, however skilled in anatomy, will undertake it on the patient. "The patient's head being turned to the side opposite that on which the operation is to be performed, introduce a narrow, spear-pointed, bistoury, close by the mastoid process of the temporal bone, with the back downwards or sacrad, and the cutting edge upwards or coronad, and the point looking also upwards or coronad obliquely to the base of the cranium; this should be pushed onwards to the bone, and afterwards carried upwards in the direction of the ear between the styloid and mastoid processes, so as to divide the nerve!!!" The rules are good, but put them in practice.

To show that this cannot be so easily done, I have, both in Scotland and Ireland, seen this operation gone through in a surgical class-room, and that very gravely, before two or three hundred students, and have afterwards traced the same nerve on the same subject, and on the same side the operation was performed through its whole extent, undivided or untouched! This, then is enough, I should suppose, for that operation.

I am now then to submit to the profession the operation I deem prudent, as being safe, sure, and easy, and one which I have regularly taught, while it was my duty to superintend the dissections of students.

I never attempt its division till such time as it has passed into the substance of parotid, and then having placed the subject, I make an incision through skin, cervical fascia, and parotid, deepening gradually, immediately anterior to the lobe of the ear, or half way betwixt zygoma and angle of inferior maxilla, until such time as I expose the nerve. I then trace it back, to make sure of having got it, before its division into temporo-facial and cervico-facial branches, and then having done so I remove part of the nerve altogether, as, after simple division, the cut extremities soon unite.

In this operation we cut no important part, and we command all the branches of the nerve, unless two or three given off before, and immediately on escaping from the stylo-mastoid foramen. Great care must be taken of the external carotid artery, or it may be wounded, and require a ligature.—*Lancet.*

Brechin, December, 1831.

GLEANINGS FROM AMERICAN JOURNALS.

On the Bitter Principle of Podophyllum Peltatum. *By* WILLIAM HODGSON, JUN.

[Read before the College, November 29, 1831.]

The recent improvements in the analysis of vegetable substances, and the consequent extension of our acquaintance with the active constituents of medicinal plants, may almost be said to have elevated vegetable chemistry to the rank of a distinct branch of science. This branch, however is yet in its infancy; and has, hitherto, in comparison with the exhaustless number of its objects, but few facts at its command. The accurate examination, especially, of those articles of our Materia Medica which are peculiar to this country, has been sparingly entered into; so that it seems the more important that every new step which may really add to the stock of our knowledge on this subject, should be carefully noted, even though the practical result may not at once be apparent. With this view, I am induced to submit to the College the following brief notes of an imperfect examination of the root of the Podophyllum peltatum, and of the extraction of a proximate principle which appears to me to be new, and peculiarly characterized.

One pound of the dried root was boiled in a gallon of water for a quarter of an hour, and the liquor then strained off and the residue pressed. The decoction was somewhat turbid and of a brown color. Two fluid ounces of aq. ammoniæ being thrown in, rendered it perfectly limpid, and presently produced a crystalline earthy precipitate, which when dry weighed 75 grains. The clear liquor was then evaporated to about one fourth of its original bulk. The free ammonia had of course escaped. On cooling, a pellicle formed on the surface, and a semi-crystalline flaky matter was deposited, copiously enveloped in jelly. In order to separate the semi-crystalline matter, I diluted the whole with cold water, and decanted off the clear liquor, which conveyed away with it most of the gelatinous mass. That which remained was nearly dried, and treated with cold alcohol of sp. gr. 817. The solution thus obtained was filtered, and evaporated by a water bath, depositing towards the end of the process the original semi-crystalline substance in the form of a brownish yellow granular mass. Suspecting that it was not yet in a state of purity, and having observed its sparing solubility in cold water, I subjected it to the boiling heat in distilled water, when it entirely dissolved, except a slight portion of impurity. As soon as the solution was allowed to cool, this substance separated in extremely small flocculent crystals, slightly heavier than the water.

I then determined to try another process. One pound of the root was boiled in about a gallon of water mixed with quicklime. The decoction, which was of a fine yellow color, was strained, and one ounce of sulphate of zinc in solution was added, which precipitated the lime. The clear liquor was then evaporated till the residuum acquired the consistence of an extract, which was treated with cold alcohol of sp. gr. 817. The alcoholic solution was filtered and evaporated to dryness, and the residuum boiled in distilled water. On cooling, the same semi-crystalline substance was obtained as by the first process. This was washed with a little cold distilled water and cautiously dried.

When dry, this substance is in pale brown scales of considerable lustre; is easily pulverized; is unalterable in the air; and has a strong bitter taste, very permanent, but not at first very apparent, owing probably to its difficult solubility, as the alcoholic solution is excessively bitter. It is copiously soluble in strong alcohol, and much more so in boiling than in cold water; the aqueous solution retaining when cold about a grain to the ounce. It is also soluble to some extent in sulphuric ether. When dry it is devoid of odor; but the solutions have a peculiar smell, somewhat resembling that of the boiled root. By the addition of muriatic acid, it separates from its aqueous solution more readily and in a finer state of division than when it falls by the mere cooling of the water in which it has been dissolved. Treated with nitric acid, it dissolves rapidly with effervescence, producing a rich deep red color. With sulphuric acid it gives an olive or green color, passing afterwards to a purple. Under some circumstances, which I have not yet been able to determine, this purple has been of a very delicate tint. Boiled in this acid it decomposes and produces a rich crimson fluid, the colour of which is destroyed by the addition of water and changed to yellow by solution in alcohol. Exposed to heat alone, it fuses, blackens and dissipates in a dense smoke. This substance in some of its habits bears a remarkable resemblance to salicine, particularly in affording a purple color with sulphuric acid.

[*Philadelphia College of Pharmacy.*]

Pharmaceutical Notices.

I was much gratified to observe in your last number a recommendation to apothecaries to keep notes of all the operations in their shops, and fully agree with the author in believing that experiments and observations such as he suggests are, without doubt, the only mode of obtaining correct practical information, and in accordance with your wish that they may be continued, I send a few that I have made from time to time, which, if you deem of sufficient importance to publish, are at your service.

Pills of powdered Cubebs.—Received a prescription today which directed powdered cubebs to be made into pills of the usual size with balsam copaiva; finding it impracticable to make them as directed, tried several of the articles used for making pills, but found none to answer so well as soap;—in the proportion of ℈j of soap to ʒjj of powdered cubebs, with a drop or two of water, a very good mass may be formed. When powdered cubebs and balsam copaiva are wanted in pills together, I find the consolidated copaiva, hard enough to powder, answers better than the fluid, although either may be made into pills with cubebs by using soap.

Pills of Camphor and Opium. When this compound is wanted, the apothecary is generally directed to use a sufficient quantity of syrup to form a mass. I have found it impracticable to form a mass without making the pills very large, until I used soap;—with a small quantity of it a mass may be formed without difficulty.

Ointment of Hydriodate of Potassa.—I have observed that this oinment, made in the proportion of ʒss of the salt to ℥j of ung. simp. almost invariably changes from white to yellow, and afterwards to a dark red, when it has stood for a day or two. I cannot account for this, except it may be that the hydriodic acid is decomposed and iodine formed.

Mixture of Epsom Salts, Magnesia, &c.—To-day, the following mixture was returned, which, when it was put up two days since, was in a perfectly fluid state, but now is almost consolidated. It is this

Sulph. Magnes.	℥j
Magnes Ust.	ʒiij
Tr. Colchici Rad.	ʒiij
Syr. Scillar.	℥ss
Aqua Cinnam.	℥iij
Aqua Communis	℥iv

Recollecting perfectly well, that it was put up according to the directions, and that it was comparatively a thin liquid, when taken from the store; I was not a little surprised to see almost a perfect solid, and certainly at a loss to account for the singular change. Fearing that possibly something might have been omitted, I made it again and again the next day it was returned in the same condition. I have since prepared it a third time, and find it undergoes the change in from 36 to 48 hours. The cause of this strange metamorphosis I cannot explain, but probably the experiments I am about trying may throw some light upon it; if they should I shall not fail to communicate them; notwithstanding, I hope others may not be deterred from giving their opinion upon it.

Balsam Copaiva and Castor Oil Mixtures.—I have often found difficulty, and no doubt others have also, in preparing these mixtures. It seems to arise altogether in not paying proper attention to the thickness of the mucilage, previous to adding the articles. As a general rule, the mucilage should be made about the thickness of the substances we wish to suspend; for if it be too thick or too thin, a handsome mixture cannot be made, whatever quantity of gum may be used. Two drachms of gum arabic will be found sufficient to suspend an ounce of either B. copaiva of castor oil in 8 oz. or even a pint of water, without being liable to separate, provided it is made into a perfect mucilage, with not more than half an oz. of water, previous to adding the articles.

Tincture of Kino.—It is remarked by the writer in your last number, that his tincture of kino uniformly becomes gelatinous. I have some which was made with 3 oz. of kino to 1½ pints *diluted* alcohol which has stood six months, that has not become so, and moreover, has not lost its astringency. The kino it was made from, is in dark brown masses, mixed with sticks and leaves. It fractures very readily—the pieces or splinters not transparent, but ruby red at the extreme edges—taste astringent and bitter, leaving a sensation of sweetness in the mouth, adhering to the teeth *only* when long chewed, and coloring the saliva very slightly. From Duncan's description, I should judge this to be the produce of the *Eucalyptera Resinifera* or brown gum tree of New South Wales. It is obtained, it is stated, by allowing the JUICE, which either flows from it spontaneously, or is procured by wounding the tree, to harden in the sun, while that which your correspondent used is the *extract* of the *Coccoloba Uvifera*, or sea-side grape, and this may probably account for the difference.

I beg leave to suggest, that those who may take notes may be particular to state the strength of the alcohol used, if for tincture,—the weight or proportions of the articles, and other minutiæ in relation to compounds, for much will depend upon this.

Yours respectfully,

AN APOTHECARY.

The editor begs to apologise for the tardiness with which the three last numbers of this journal have been published; he returns thanks to his subscribers for their support, and regrets that his professional avocations compel him to discontinue the publication.